THE

URBAN DISTRICT COUNCIL OF OLDBURY.

Annual Report

OF THE

HEALTH OF OLDBURY,

FOR THE

Year ending December 31st, 1903,

AND

REPORT OF SANITARY INSPECTOR.

GEO. B. BUTTERY, L.R.C.P., etc.,

FELLOW OF INCORPORATED SOCIETY OF MEDICAL OFFICERS OF HEALTH,
MEDICAL OFFICER OF HEALTH.

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The Urban District of Oldbury.

INTRODUCTORY.

To the Chairman and Members of the Urban District Council of Oldbury

GENTLEMEN,

I have pleasure in submitting my Annual Report for 1903. The health of the town during the past year has been of a favourable character. This is shown by the low death-rate, which is the lowest recorded in Oldbury. As you will see by my Report, we had a continuance of the Scarlet Fever outbreak, yet I am pleased to say it was not of a very fatal type; there were seven deaths in all out of 170 cases notified. We had also a slight visitation of Small-pox, but it was immediately prevented from spreading by taking the precaution of isolation as soon as the cases were notified; we therefore trust that we shall escape any outbreak of any dimension. Our arrangements have been continued with the Smethwick Council until the Hospital question is finally settled.

The other Sanitary work of the town is being carried out in a satisfactory manner, without giving rise to any friction to any of the manifold interests concerned.

The working of the Factories and Workshops' Acts is proceeding smoothly, and, I trust, to the well-being of all concerned.

VITAL STATISTICS.

Area of the District.

The Area of the Urban District of Oldbury is 3548 acres.

Population.

The estimated Population of Oldbury, calculated to the 30th June, 1903, is 25,700.

Inhabited Houses.

The number of new houses erected during 1903 was 196; this number added to those already existing brings up the number to 5754. Of these 336 are estimated as voids, leaving 5418 as being inhabited at 31st December, 1903. A population of 25,700 gives an average of 4·7 persons to each house.

Birth-rate.

The total number of births registered during 1903 was 915, viz., 440 males and 475 females; giving a birth-rate of 35·6 per 1000 per annum. This is less than that of the previous year, when it was 38·4 per 1000.

The birth-rates of the previous 10 years were as follows:

	Birth-rate.
1893 - -	43·3
1894 - -	39·6
1895 - -	36·9
1896 - -	37·9
1897 - -	37·1
1898 - -	34·2
1899 - -	38·5
1900 - -	36·5
1901 - -	35·7
1902 - -	38·4

The average for the 10 years being 37·8. From these figures it will be seen that the birth-rate for the past year is slightly less than the average rate of the preceding 10 years. Still our birth-rate continues to be considerably higher than that of the whole of England and Wales, which is 28·0 per 1000 per annum. Our birth-rate may therefore be considered satisfactory.

Death-rate.

If our birth-rate is slightly below the average, our death-rate is considerably lower than the average; in fact it is the lowest death-rate ever recorded in Oldbury. The total number of deaths registered in the district was 404, which gives an annual death-rate of 15·6 per 1000, against 16·7 recorded in the previous year, which was then considered a very low rate for Oldbury.

The death-rates for the previous 10 years were:

	Death-rate.
1893 - -	24·6
1894 - -	16·1
1895 - -	19·0
1896 - -	22·9
1897 - -	16·8
1898 - -	23·8
1899 - -	19·6
1900 - -	20·6
1901 - -	16·8
1902 - -	16·7

Average for the 10 years, 19·6.

This year I have had to include the deaths of the inhabitants who have died out of our registration district. These have occurred in the following institutions:—The Workhouse, West Bromwich; Birmingham General and Queen's Hospitals. The deaths which have been returned to me from these amount to 34. These added to the number given above, viz, 404, gives a total of 438, and an annual nett death-rate of 17·3, which is considerably below the average rate of the previous 10 years, when the deaths occurring out of our area were not taken into account.

Infantile Deaths.

The number of deaths of children under one year was, in 1903, 173; giving an infantile mortality of 186 per 1000 births. This is considerably higher than that of the previous year. The year 1902 was, however, considered a very exceptional year throughout the country as giving a very low infantile mortality.

The main causes of increase in our infantile mortality were two diseases which were very prevalent, viz., chest affections and intestinal complaints. Bronchitis and pneumonia gave 40 deaths, against 19 in 1902, and diarrhœal diseases caused 30, against 15 in the previous year. There were also a few more deaths from

premature birth. The increase in these three causes of death accounted for our higher mortality. The statement of these facts does not, however, satisfactorily dispose of the difficult problem—"How we are to reduce a high and maintain a low infantile mortality." Every endeavour is being made to bring about this wished for result. The only hope, in my opinion, is to educate the younger mothers and fit them for the duties of motherhood by teaching them the value of fresh air in their rooms, suitably to feed, clothe, and improve generally the surroundings of the home. With this object in view the Oldbury Council have, with the assistance of the County Council, provided the Lady Health Missioner, who is doing her best to forward this good work; but no doubt it will take some time before we shall see much beneficial result from the labour devoted to this important branch of public health work.

Zymotic Deaths.

The zymotic deaths registered have been 11 from measles, 7 from scarlet fever, 4 from whooping cough, 3 from membranous croup and diphtheria, 7 from typhoid fever, 31 from diarrhœa, and 12 from enteritis. The zymotic death-rate is 2·4 per thousand, against 2·5 in the previous year. Diarrhœa and enteritis were the chief factors in keeping up our zymotic deaths, otherwise our epidemic death-rate would have been very low.

Phthisis and Respiratory Deaths.

Eleven death were registered from phthisis during the year, giving a phthisis death-rate of ·4 per thousand; this is lower than in the previous year, when it was ·58. Several phthisiscal patients from Oldbury have been treated at the Sanatorium at Knightwick, and so far with fairly good results. Yet it is early to pronounce a definite opinion as to the permanent effects in the cases who have been treated at the Sanatorium.

The deaths from the other respiratory diseases have in numbers been very similar to those experienced in the previous year, viz., 90 deaths, with an annual respiratory death-rate of 3·5, against 94 deaths and a death-rate of 3·6. The only matter calling for remark is that 21 more infants died from respiratory diseases than in 1902.

Cancer Deaths.

There was a considerable decrease in the number of deaths from cancer in 1903 compared with 1902, being 7 deaths

against 17. The cases were spread over the whole district with the exception of Warley, where no death occurred from this disease.

Epidemic Diseases.

During the year scarlet fever continued to manifest itself, but not with the same intensity that it did in 1902. 170 cases were notified to me, and as will be seen on referring to Table III. the greater proportion occurred in the Langley and Warley Wards. 75 in the former, and 36 in the latter. There were 29 in Broadwell, 17 in Rounds Green, and 13 in the Central Ward. The disease was not of a very severe type; 7 deaths were registered from this cause.

Typhoid Fever.

Thirty-three cases of typhoid fever were notified during the year. Of these 14 were treated at the Hospital at Newbury Lane, 13 of these made good recoveries. The one fatal case was of long duration, and he died ultimately of exhaustion. Of the 19 cases treated at their homes 6 died.

Typhoid is a disease in which benefits of hospital treatment are very clearly shewn. The patients can be properly nursed and fed with due care and attention. This is often impossible to be attained in the homes of many of those afflicted, with the result as proved above by a great mortality amongst those treated at home.

Diphtheria and Membraneous Croup.

We still continue to experience great immunity from these dreaded diseases. There were two deaths from membraneous croup and one from diphtheria, and these were the only cases notified during the year as suffering from these diseases.

Small-Pox.

It was almost too much to hope that we should escape entirely from a visitation of small-pox, seeing that we were surrounded on every side by neighbouring authorities who were suffering from outbreaks of that disease. We were, therefore, not surprised when a case was notified to us. The disease was introduced into our district by a woman who came to visit her son at Rood End. She had previously been staying with a daughter in Birmingham who had had one of her children down with small-pox while the woman was there. Dr. Robertson communicated with me, and

after some difficulty we found the woman staying as stated above with her son. She immediately went away to her home, but three weeks afterwards the son's wife was reported to us as suffering from small-pox. She was removed at once to the Small-pox Hospital, every precaution was taken, and no further case occurred in that neighbourhood.

A second case occurred in Langley but we could not trace its origin. The patient was removed at once to the hospital and no further case resulted. Both these cases made good recoveries They had both been vaccinated in infancy.

Measles.

Towards the end of the autumn an outbreak of measles occurred in Langley. There had previously been a few sporadic cases in the early part of the year in other parts of the town, but it did not gain much hold, and it entirely disappeared during the summer months. Eleven deaths have been registered from this disease.

TABLE I.

Birth-rate, 35·6.	Phthisis death-rate, 0·4.
Nett death-rate, 17·3.	Measles death-rate, 0·4.
Infantile Mortality, 186·.	Zymotic death-rate, 2·4.
Small-pox death-rate, 0·0.	Respiratory death-rate, 3·5.
Diphtheria and Membraneous Croup death-rate, 0·1.	Scarlet Fever death-rate, 0·27.
	Whooping Cough death-rate, 0·15.
Fever death-rate, 0·27.	Cancer death-rate, 0·27.
Enteritis death-rate, 0·46.	Diarrhœa death-rate, 1·2.

TABLE II.—*Causes of, and Ages at, Death during Year 1903.*

Causes of Death.	Deaths in Whole District at Subjoined Ages.							Deaths in Localities (at all ages).					Total Deaths in Public Institutions in the District.
	All Ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	Broadwell Ward.	Central Ward.	Rounds Green Ward	Langley Ward.	Warley Ward.	
Small-Pox	...	...	..	...	...	...	...	...	...	...	...	...	These deaths occurred at the West Bromwich Hospital and Workhouse, General and Queen's Hospital, Birmingham.
Measles	11	0	11	..	...	...	...	1	4	1	4	1	
Scarlet Fever	7	...	5	2	...	...	...	2	...	...	4	1	
Whooping-Cough ...	4	4	...	...	...	...	...	.	1	2	...	1	
Diphtheria and Membraneous Croup ...	3	...	1	2	...	...	...	...	2	...	...	1	
Croup	1	1	...	...	...	...	...	...	1	...	...	...	
Fever—Typhus ...	...	...	...	...	...	...	...	...	...	...	...	..	
Fever—Enteric ...	7	...	...	2	1	3	1	1	...	2	4	...	
Fever—Other continued	...	...	...	...	...	...	...	...	...	...	...	...	
Epidemic Influenza ...	2	...	...	...	...	2	...	...	1	...	...	1	
Cholera	...	...	...	...	...	...	...	...	...	...	...	..	
Plague	...	...	...	...	...	...	...	...	...	...	...	...	
Diarrhœa	31	23	5	...	...	...	3	4	8	6	10	3	
Enteritis	12	7	1	...	...	1	3	3	4	2	2	1	
Puerperal Fever ...	1	...	...	...	...	1	...	...	...	...	1	...	
Erysipelas	1	1	...	...	...	...	...	...	...	...	1	...	1
Other Septic Diseases...	1	...	...	...	...	1	...	..	1	...	...	...	
Phthisis	11	...	1	1	1	8	...	1	1	5	2	2	3
Other Tubercular Diseases	11	2	2	1	...	4	2	3	3	...	1	4	
Cancer, Malignant Disease	7	...	...	...	...	5	2	2	2	1	2	...	1
Bronchitis	56	29	7	2	...	6	12	13	10	17	8	8	3
Pneumonia	34	11	16	3	1	2	1	8	9	10	6	1	4
Pleurisy	...	...	...	...	...	...	...	...	1	...	...	...	
Other Diseases of Respiratory Organs ...	...	...	...	...	...	...	...	...	...	...	...	...	
Alcoholism } Cirrhosis of Liver } ...	6	...	...	...	...	4	2	3	...	...	3	...	1
Venereal Diseases ...	2	2	...	...	...	...	...	...	...	...	...	2	
Premature Birth ...	23	23	...	...	...	...	...	2	7	4	8	2	
Diseases and Accidents of Parturition ...	4	1	...	...	1	2	...	1	2	...	...	1	
Heart Diseases ...	19	...	...	2	2	11	4	2	5	4	6	2	4
Accidents	6	2	2	...	...	2	...	2	...	3	...	1	3
Suicides	2	...	...	...	...	1	1	1	..	1	...	...	
All other Causes ...	142	67	8	3	1	33	30	23	40	36	24	19	14
All Causes ...	404	173	59	18	7	85	62	71	101	94	87	51	34

TABLE III.—*Cases of Infectious Disease Notified during the Year 1903.*

Notifiable Disease.	Cases Notified in Whole District.							Total Cases Notified in each Locality.					No. of Cases Removed to Hospital from each Locality.				
	At all Ages.	At Ages—Years.						Broadwell Ward.	Central Ward	Rounds Green Ward.	Langley Ward.	Warley Ward	Broadwell Ward.	Central Ward.	Rounds Green Ward.	Langley Ward.	Warley Ward.
		Under 1.	1 to 5.	5 to 15.	15 to 25	25 to 65	65 and upwards								H		
Small-Pox	*2	...	...	...	*2	...	...	*1	...	...	1	...	*1	...	...	*1	...
Cholera	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	1	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...
Membraneous Croup	1	...	1	...	...	...	.	...	1	...	...	...	..	...	...	...	...
Erysipelas	39	1	2	3	4	24	5	6	12	6	12	3	...	...	...	...	...
Scarlet Fever	170	3	57	98	10	2	...	29	13	17	75	36	...	...	...	...	...
Typhuse Fver	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	33	...	6	13	4	9	1	5	8	7	6	7	1	2	3	2	4
Relapsing Fever	...	...	...	...	...	...	...	...	...	...	...	. .	...	...	...	...	...
Continued Fever	...	...	...	...	...	...		...	...	...	...	...	...	...	...	...	...
Puerperal Fever	2	...	...	...	1	1	...	...	...	...	...	2	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Chicken-pox	21	3	10	8	...	...	...	6	2	9	4	...	...	...	...	...	...
Totals	269	7	76	123	21	36	6	47	37	39	98	48	2	2	3	3	4

* Cases removed to the Smethwick Small-pox Hospital.

H.—The Infectious Hospital is situated in Rounds Green Ward.

Slaughter-houses.

The Slaughter-houses in the district have been under strict supervision during the year; several carcases which were of a doubtful character have been, at our suggestion, destroyed. The Sanitary Committee, accompanied by the Surveyor, myself, and the Sanitary Inspector, made a special inspection of the whole of the Slaughter-houses; several improvements were recommended, and the owners have been notified by the Clerk to carry out the required alterations.

The Sanitary Committee, accompanied by the same officers, made a special visit to the new knacker's yard and slaughter-house recently erected off Birchfield Lane. These premises have been built on the latest scientific principles, and if the arrangements continue to be carried out they cannot give rise to any nuisance to the surrounding district. The Committee expressed themselves as highly pleased with the arrangements, which are a decided improvement on the old methods of carrying on this business.

Workshops and Factory Acts.

The workshops and factories have received our constant attention during the year. The Sanitary Inspector has made regular visits to the various places of employment, and has supervised the carrying out of necessary improvements in several instances. I have myself also visited most of the workshops in the district, and I have made suggestions as to proper heating, ventilating and improving the general conditions under which the workers follow their employment; in every case the employers expressed themselves willing to carry out my suggestions. I am confident that the workers will be greatly benefited by the operation of the Factories and Workshops' Act of 1901. The powers which were conferred on the local authorities must certainly conduce to the welfare of the working community, especially those who have to follow their employment in small work-rooms, and the class of employees who are termed out-workers. The conditions under which the last named earned their livliehood before the adoption of this Act were anything but satisfactory, in fact they were, in many cases, decidedly unhealthy.

Bakehouses.

The bakehouses are being kept under strict supervision, and although some of them are not as satisfactory as we could desire,

yet great improvements and alterations have been made in their condition. The sanitary arrangements have been rectified, and proper ventilation has been insisted upon.

Water Supply.

Several wells have been closed during the year; the water from these being was proved unfit for human consumption. A plentiful supply of pure water being one of the first essentials of life and health, every precaution is being taken to assure that this commodity shall be supplied to the inhabitants. During some portion of the year there was a shortage of the water supply in the higher parts of the town, but steps have been taken by the Water Company to remedy this, and we are assured that there will be a plentiful supply in the future.

The Milk Supply.

The dairies and cowsheds continue to be regularly inspected both by the Sanitary Inspector and myself. The conditions of these sources of our milk supply are vastly improved to what they were before the adoption of the Cowsheds and Dairies Acts. The cowsheds are larger, cleaner, better ventilated, and altogether improved. The animals appear better fed and healthier. The quality of the milk is superior than formerly, and the places for storing the same are considerably altered for the better.

Sewerage and Drainage.

Progress continues to be made in the sewering and drainage of the district. A good many of the old drains have been relaid and a great number of houses have been connected to the sewers during the year. A number of the old privies have been converted into the water carriage system, which must, I feel confident, conduce to improve the health of the people.

The vexed question of sewering the Warley district is now within sight of being settled. The main sewer has been laid in the greater part of the district, and we are only waiting for the erection of the pumping station when the sewers will be connected to the outfall works at Roway Lane. When this has been effected we shall be able to get rid of most of the dumb-wells, which have been a constant source of annoyance to the inhabitants and

of anxiety and worry to the officials in charge of them; especially during the past rainy season, which has been the cause of no end of trouble and expense.

Night-Soil and Refuse.

The contractors have carried out the work of night-soil removal in a fairly satisfactory manner, particularly when the rainy weather we have experienced during the past year is taken into consideration. The re-construction of many of the old privy middens into dry ashpits greatly faciliate the removal of rubbish. The whole of this branch of our sanitary work is under the supervision of the Sanitary Inspector, who does his utmost to have the work properly carried out.

The Lady Health Missioner.

When dealing with the subject of infant mortality I incidentally mentioned the work of the Lady Health Missioner. Miss Phipps has now completed her first year's work in Oldbury. It is of course early to form any decided opinion as to the results of her work on behalf of the infant children of the poorer neighbourhoods. Still, no one can doubt that her efforts must tend to produce a better condition of things in the future.

Her duties consist in visiting the homes in certain districts of the town, to give advice on the feeding, nursing, clothing, and health rules generally for the rearing of children; also to impress upon the people the necessity of properly ventilating their houses, especially the sleeping rooms, to keep them sweet and clean by using plenty of soap and scouring the floors regularly. Up to the present she has been well received everywhere she has gone. In many instances she has been called in to give advice, and her opinion on matters relating to the treatment of the children, etc. I recently wrote to all the ministers of religion in the town offering to allow Miss Phipps to give addresses to the mothers' meetings held at the various churches. I have received favourable replies from most of them accepting the offer, and Miss Phipps has already given several addresses to well-attended meetings. I therefore am looking forward to good results from this branch of our health work.

The Sanitary Congress.

In July last Mr. Robbins and I attended the Sanitary Congress which was held at Bradford as representatives from your

Council. The work done in the various sections at the Congress was of a highly instructive and interesting character. The opportunities afforded of visiting and inspecting the various sanitary arrangements of the towns where the Congress is held cannot but prove beneficial to those who have to carry out public health work, and your officers have to thank the Council for allowing them the privilege and opportunity of extending their knowledge and experience.

The Sanitary Officer's report is appended, which shews in detail the amount of sanitary work accomplished during the year.

I am, Gentlemen, yours obediently,

GEO. B. BUTTERY, L.R.C.P., &c.,

Medical Officer of Health.

Kingston House,
Oldbury,
February 20th, 1904.

The Urban District Council of Oldbury.

Annual Report of the Sanitary Inspector.

Mr. Chairman and Gentlemen,

I have the honour to present to you the Annual Report of the sanitary work completed in this district during the year ending December 31st, 1903.

We have satisfaction in recording the improvement in the sanitary condition of the township which has been made. The works of reconstruction and repair have been many and varied, and we have worked strenuously and with considerable activity to realise the improved sanitary conditions which have been accomplished.

There has been a constant visitation of the most insanitary portions of the district, and we have brought ourselves into contact with the owners of properties with the exact purpose of causing them to fully understand the nature and conditions of their tenements, and also the necessity of keeping the premises in as cleanly and healthy condition as possible, and in many cases the owners have realised the fact that if their properties depreciated in sanitary condition then a less respectable class of persons would become occupants, and thus the properties would become demoralised.

We have found that the most thriftless and improvident class of persons, who occupy the lesser respectable kind of tenements, are those who are the least careful as to sanitary condition and general repair, and our object has been as far as possible to instruct and inform these individuals with regard to the necessity of living in wholesome and cleanly conditions, with proper light, breathing space, and ventilation for each person, thereby to inspire them with a true responsibility of their position in ordinary life.

Our works of re-construction and repair, and the rendering habitable of houses and dwellings, is represented by the following particulars, viz. :—122 houses have been re-constructed or repaired and made fit for habitation, and 134 houses have been cleansed

and limewashed, and 9 houses have been closed as unfit for human habitation, and 14 cases of overcrowding have been dealt with.

Sanitary Conveniences.

Our attention has been directed to the provision of proper sanitary conveniences, the old midden steads are gradually disappearing, and in their places are being substituted well constructed w.c's with proper flushing apparatus, and thus our efforts in the abolition of the old privy and pan systems year by year is causing the premises, especially in close and confined courts and yards, to be more cleanly and sanitary. We have, therefore, had 16 new w.c's provided, 93 w.c's have been converted from old privy middens, 6 have been restored to proper working condition, and 50 privies and ashpits have been reconstructed or repaired.

House Drains.

This work has had our most vigilant attention, and we have given our time unstintedly to the necessary inspection of those premises which, by reason of the character of the occupants or the position and condition of the properties, has caused us anxiety lest the inconsiderate treatment of the drains by the occupiers should be a source of nuisance, and thereby to seriously impair the health conditions of the premises. We have caused 255 house drains to be laid or relaid, 46 have been cleansed, trapped or ventilated, 4 defective waste pipes have been rectified, and 6 insanitary lavatories, sinks, or urinals have been repaired.

Infectious Disease.

We have followed a regular and consistent course with the enquiry into cases of Infectious Disease, first as to the means of isolation and sanitary condition of the premises, and likewise attention has been given to the distribution of the family in their school or work day life, a proper supply of disinfectants have been sent to the infected houses, and instructions given to those in charge of the household for their proper and constant use, and we have instructed them how best to deal with the infected clothing, and where possible have had patients removed to hospital, and in all cases—both when there has been a removal to hospital, or if remaining at home the patient has become convalescent—the bedding and clothing has been disinfected by our

steam disinfector, and the house and premises have undergone a thorough fumigation and disinfection, after which walls and ceilings have been stripped, cleansed, and limewashed according to the certificate or instructions of the Medical Officer of Health.

We have made enquiries as aforementioned into 230 cases of Infectious Disease, 420 lots of bedding or clothing have been disinfected or destroyed and 214 houses have been subjected to fumigation, stripping, cleansing, and limewashing.

Dairies and Cowsheds.

The inspection of dairies and cowsheds is a very important part of our regular duty, and the cowkeepers are realising more than heretofore the necessity of using means to ensure the health and good condition of their cattle, which in itself is required to produce a pure and good milk, both for the profit of the owners and the health of the consumers, therefore much more care is shown in the keeping of the byres and sheds in a cleanly and wholesome condition, and that means of ventilation are continuous and efficient. We have watched the action of those persons who have had to deal directly with the cattle, and the production of the milk, and the character and condition of the utensils, to ascertain that cleanliness and care was observed both in the cowsheds, dairies, and in its transport or delivery. We have increased the number of the sheds in the district, one having been newly built and three reconstructed during the year.

Food.

We have kept a vigilant outlook on the food supply of the township, and have regularly visited the markets which are held weekly, and have examined the produce of different kinds which has been exposed for sale. We have made five seizures of fish, rabbits, &c., as unfit for human food, and a quantity of meat and vegetables were surrendered to us; three prosecutions have been instituted by your Council with the result that in two cases fines of five pounds and costs were imposed, and in one case the justices sentenced the person to two months' imprisonment without the option of a fine. We are pleased to find a continued improvement in the food supply of the district.

Water Supply.

The work in connection with the good and proper supply of water to the district has been enforced with a continuity which has had no diminution, with the result that there are but a few shallow wells in existence in comparison with the regular supply which has been provided for domestic purposes to the houses and premises by the waterworks, and these wells year by year are becoming less in number by reason of the closure of those upon which suspicion has rested. We have taken 10 samples of water, and 11 wells have been closed, and 260 houses have been supplied in Oldbury and Warley districts during the year.

Factories and Workshops Acts.

We are visiting the work-shops and work-places and giving directions to the occupants for carrying out the necessary requirements of the Acts. We have now 125 upon the register, and are carefully revising the matter relating thereto, and where any complaint has been made our attention has been directed to the necessities of the case, and four insanitary conditions have been dealt with, and two where cleansing and limewashing was needed.

Scavenging and Cleansing of Premises.

The necessity for strenuous effort in this department is seen by the character of the work, and the due regularity with which it must be performed, and we are following it with some anxiety to obtain the best results possible. Our contractors have interested themselves under our guidance and instructions to do this work, so that no complaints can be made against them or their workmen. The past year has been notable, and has caused the work to be more difficult and arduous in its execution by reason of the continuous rainfall, the workmen having experienced great discomfort, and this has been of grave import to the contractors who have had great difficulty in keeping a proper staff of men at their command, but by careful supervision we have had the work done with promptitude and dispatch. We have caused the courts and yards of large area to be periodically cleansed and disinfected, and by reason of this they present a more cleanly and orderly condition.

Canal Boats Inspection.

I beg to present to you the annual report of the work in connection with the Canal Boats Acts in this district during the year ending December 31st, 1903.

There has been a regular and continuous supervision of the boats plying along the canals, and every lawful means used to ensure their full conformity with the Canal Boats Acts and Local Government Regulations. There have been 301 inspections of canal boats during the year, and careful note has been taken of the occupants and the conditions under which they were living, thus, as far as possible, to cause the cabins to be kept in a cleanly and orderly condition. The number of contraventions of the Acts and Regulations has been 52, which have been dealt with in the usual course, and in most of the cases the several owners have carried out the instructions, and have executed the works necessary, or have made the proper provisions to cause the boats and their occupants to conform with the Acts and Regulations.

The total number for which the boats were registered is as follows:—1030½ persons, and there were in occupation 472 males and 177 females, and 220 children; 131 being of school age and 89 under school age. In the table beneath are given the numbers and ages of the children in occupation:—

														Under
Ages ...	13	12	11	10	9	8	7	6	5	4	3	2	1	1 year.
Girls ...	0	1	9	8	1	6	4	7	5	4	13	12	14	10
Boys ...	3	14	13	10	9	8	10	10	13	13	2	9	5	7

The contraventions have been varied in character, consisting of overcrowding, want of cleanliness, absence of certificate, and without proper water vessel.

We have found, on inspection, that the fore cabins of many of the boats have been damp, and when we have called the attention of the captains and interrogated them as to the reason, their complaint has been that in entering the locks it was impossible to keep the water from rushing over the tops of the cabins, and thus it has percolated into the woodwork or cabin of the boat, and this we have proved from our own observation.

In several cases the boats were without pumps, and we have invariably pressed the captains to get proper pumps provided and the boats thoroughly equipped in the smaller particulars necessary for their work.

I have also pointed out to the representatives of the owners of boats the necessity of having every boat supplied with those things which make the work as convenient for the workpeople as possible.

There has been no case of infectious disease in any of the boats during the year.

I append a tabular summary of sanitary work completed in this district, and likewise a statistical supplement of canal boats inspection.

Gentlemen, I am, your obedient Servant,

GEORGE H. ROBBINS,

Sanitary and Canal Boats Inspector.

Tabular Summary of Sanitary Work completed in the year ending December 31st, 1903.

	No.
No. of Complaints	20
Notices issued for Abatement of Nuisances	412
Notices complied with	400
Notices outstanding	12
HOUSES—	
Erected	196
Repaired	122
Closed as Unfit for Human Habitation	9
No. Cleansed and Limewashed	134
OVERCROWDING—	
Cases Abated	14
HOUSE DRAINS—	
Drains Laid or Re-laid	255
Cleansed, Trapped, or Ventilated	46
Sink Pipes properly Disconnected	4
Lavatories or Urinals Built or Repaired	6
WATER CLOSETS—	
No. of additional W.C's provided	16
No. Repaired, Ventilated, or Supplied with Flush Cisterns	6
PRIVIES AND ASHPITS—	
No. of Additional Privies and Ashpits provided :	
Privies	3
Ashpits	3
No. Converted to W.C's or Slop Closets	93
No. Re-constructed or Repaired	50

	No.
SCAVENGING—	
No. of Houses from which Refuse is Removable	5814
No. of Privies and Ashpits Cleansed	19927
OFFENSIVE TRADES—	
No. under observation	2
WATER SUPPLY—	
No. of Samples of Water taken for Analysis	10
No. of Wells Closed as Polluted	11
No. of Houses supplied from Waterworks during the year	260
SLAUGHTER-HOUSES—	
Registered or Licensed	6
No. Regularly Inspected	6
No. Cleansed or Repaired	6
FACTORIES AND WORKSHOPS—	
No. under Inspection	125
No. Certified for Limewashing by Inspector	2
No. of Insanitary Conditions dealt with	4
DAIRIES AND COWSHEDS—	
No. of Persons engaged in Milk Trade now on Register and under Supervision	50
No. of Contraventions of Acts, Orders and Bye-laws dealt with	3
FOOD—	
No. of Seizures as Unfit for Consumption	5
LODGING HOUSES—	
Registered	2
Regularly Inspected	2
Repaired, Cleansed and Limewashed	2
ANIMALS KEPT SO AS TO BE A NUISANCE—	
No. of Cases of Removal on Notice	4
OFFENSIVE ACCUMULATIONS—	
Removal of Dung, House Refuse, etc.	14
LEGAL PROCEEDINGS—	
No. Taken	5
No. of Convictions obtained	4
No. of Cases Withdrawn on payment of Costs after Work being done	1

Precautions against Infectious Disease—	No.
No. of Cases of Infectious Disease inquired into -	230
Lots of Bedding and Clothing Disinfected or Destroyed	420
No. of Houses Disinfected, Stripped, Cleansed and Limewashed - - - - - -	214

Canal Boats' Acts, 1877 and 1884.

301 Canal Boats were Inspected, Registered for 1030½ Adults.

281 Canal Boats were conforming to the Acts and the Local Government Regulations.

Total Number occuping Cabins of Adults Age - -	649
Male Adults - - - - - -	472
Female Adults - - - - -	177
Children of School Age - - - - -	131
Boys - - - - - -	90
Girls - - - - -	41
Children under School Age - - - - -	89
Boys - - - - -	36
Girls - - - - -	53

Details showing numbers Infringing the Acts and Regulations—

No. of Cases met with.		No. of Cases remedied.
4	Absence of Certificates - - - - -	3
2	Marking - - - - - - -	2
4	Overcrowding - - - - -	4
4	Separation of Sexes - - - - -	3
8	Cleanliness - - - - - - -	5
2	Painting - - - - - - -	2
3	Ventilation - - - - - - -	2
3	Dilapidation - - - - - -	2
2	Removal of Bilge Water - - - -	2
15	Without Pumps - - - - - -	0
5	No Proper Water Vessel - - - -	5
52	Total Cases met with.	Total Cases Remedied 30

No. of Printed Notice Forms issued - - -	20
No. of Notices attended to - - - -	17
No. still Corresponding about - - - -	3

COUNTY BOROUGH OF OLDHAM.

REPORT

ON THE

Health of Oldham

For the Year 1903,

BY

JAMES B. WILKINSON,

M D., C.M., D.P.H., F.C.S.;

Medical Officer of Health;

Medical Superintendent of Westhulme and Strinesdale Hospitals;

Ex-President and Examiner to the Institute of Sanitary Engineers.

OLDHAM:

W. E. Clegg, Printer, Stationer, Etc., 30, Market Place, and Peter Street

MEMBERS OF THE HEALTH COMMITTEE, 1903:

Mr. Alderman Simister, Chairman.

,, Councillor Grime, Vice-Chairman.

The Mayor.	Mr. Councillor Dixon.
Mr. Councillor Carson.	,, ,, Gartside.
,, ,, Clough.	,, ,, Schofield.

HOSPITALS SUB-COMMITTEE
AND
INSANITARY DWELLINGS SUB-COMMITTEE:

All the Members of the Committee.

To the Chairman and Members of the Health Committee.

Gentlemen,

I have the honour to present for your consideration my Annual Report on the Health of the Borough during the year 1903, and in preparing this report I have deemed it advisable, in order to facilitate comparison, to observe a similar arrangement to that in the reports of previous years.

Part I. deals with the Vital Statistics and Meteorological conditions of the town; Part II. with Infectious Diseases, while Part III. is devoted to a consideration of the work which is carried out by the Department to maintain and improve the health of the inhabitants.

The Appendix contains a report of the treatment of the Sewage of the town during the past year.

Though the year 1903 has not been altogether a pleasant one as regards climatic conditions, it has not been an unhealthy one, for the death-rate was considerably the lowest ever recorded in the Borough.

I regret to say that Diphtheria has again shown a tendency to increase, and there are many indications that its spread is largely due to school associations.

The two matters I would specially invite the Council to consider are indicated in my remarks, under the heading of "Education," and on the unsatisfactory accommodation at the offices.

It is with much regret that I record the death, after a painful illness, of your oldest servant but one, Mr. J. Chambers, who, at the time of his death, had completed 27 years of faithful service in the Health Department.

In conclusion, I must express my great appreciation of the willing co-operation every member of the staff has accorded me, and also tender my sincere thanks for your support and assistance during the past year, and trust that our association may always remain as pleasant and enjoyable as it has been during that period.

I have the honour to remain, Gentlemen,

Your obedient Servant,

JAMES B. WILKINSON.

Medical Officer of Health.

Town Hall,
Oldham.

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Appendix.

THE TREATMENT OF OLDHAM SEWAGE IN 1903.

Part I.

VITAL STATISTICS.

In accordance with the instructions issued by the Local Government Board for the Medical Officer of Health's Annual Report a brief description of the town is required, though the following facts may seem superfluous locally.

The town is mainly situated on the south-western slopes of offshoots from the Yorkshire range of hills, the height of the surface varying from about 1,200 feet above the sea level at the highest point, to 360 feet in the lower part of the town. The Old Market Place is 696 feet above the sea level.

The subsoil is chiefly rock or shale overlying the coal measures, and in the lower part of the town there are areas of clay with occasional sand pockets.

The country to the west and south-west is open to the sea, which is about 50 or 60 miles distant. The situation of the town is thus naturally an exposed one, with a heavy rainfall.

The population of the town is chiefly industrial. The main industry of the town is cotton spinning, but there are also large engineering works, chiefly for cotton machinery, weaving mills, boiler works, gas meter works, and coal mines, &c.

The population at the 1901 census was 137,238.

POPULATION 1903.

The two most common methods of estimating the increase of the population of a district from year to year are—1st, by estimating the increase which would take place assuming the increase is at the same rate as that during the ten years previous to the last census. The number obtained by this method is that adopted for the calculation of the various health statistics, and at the middle of the year 1903 the population of Oldham is estimated to be 138,786, being an increase over the preceding year of 695.

The second method is termed the natural increase, or the excess of births over the deaths during the year, and according to this method the increase of the population is somewhat larger—viz., 969. It is somewhat unusual that the increase of males slightly exceeds that of the females, being 489, and of females 480.

BIRTHS.

During the year the number of births registered were 3,545. Of these 1,782 were males and 1,763 were females This number is equal to a rate of 25·6 per 1,000 of the population, and with the exception of the year 1901 is the lowest annual birth rate recorded in the Borough.

With the exception of Blackburn, where the rate is 25·1, Oldham has a considerably lower rate than the other large Lancashire towns, and throughout England—Brighton, Plymouth, Huddersfield, Halifax, and Bradford, are the only large towns having a lower rate. In comparing the various Wards of the town, Hartford and Coldhurst again

have exceedingly low rates, the former 14·5 and the latter 17·4. In both of these Wards the deaths considerably exceed the number of births. Hollinwood, with 36·3, has the highest birth rate of any Ward, and is followed by St. Mary's with 34·6.

The illegitimate births during the year numbered 157, or 4·4 per cent. of the total number. Among the Wards, Westwood has the worst reputation, 11 per cent. of the births being illegitimate, and Hartford the best with 1·6 per cent.

Eighty-six of the above births, which occurred prematurely, resulted in death within a short period.

DEATHS.

During the year 2,690 deaths were registered in the Borough, but from this number 122 deaths of non-residents, chiefly persons from the out-districts who have died in the Workhouse, must be deducted, and 8 residents who have died outside the district must be added, giving a net result of 2576. This is equal to a death rate of 18·6 per 1000 of the estimated population.

Previously the record lowest death rates were in the years 1901 with 19·1, and in 1898 with 19·2 per 1000, so that the past year has considerably the lowest death rate that has ever been recorded in the Borough.

The average death rate for the previous ten years was 20·9 per 1000.

The Wards in the town having the lowest rates are St. Peter's with 15·2, and Werneth with 15·7. Those which have the highest are Mumps with a rate of 23·8, and Cold-

hurst with 22·2. Compared with the other large Lancashire towns, Oldham comes third, Blackburn having a death rate of 15·7, Bolton of 17·5, Preston 18·7, Salford 19·0, Burnley 19·2, Manchester 19·7, and Liverpool 20·5.

The principal causes of death are enumerated in the summary on page 21, and in a more extended manner in Table 15.

The highest death rate occurred in the months of January and November, due in the former principally to Lung Diseases, and in the latter to Bronchitis and Measles.

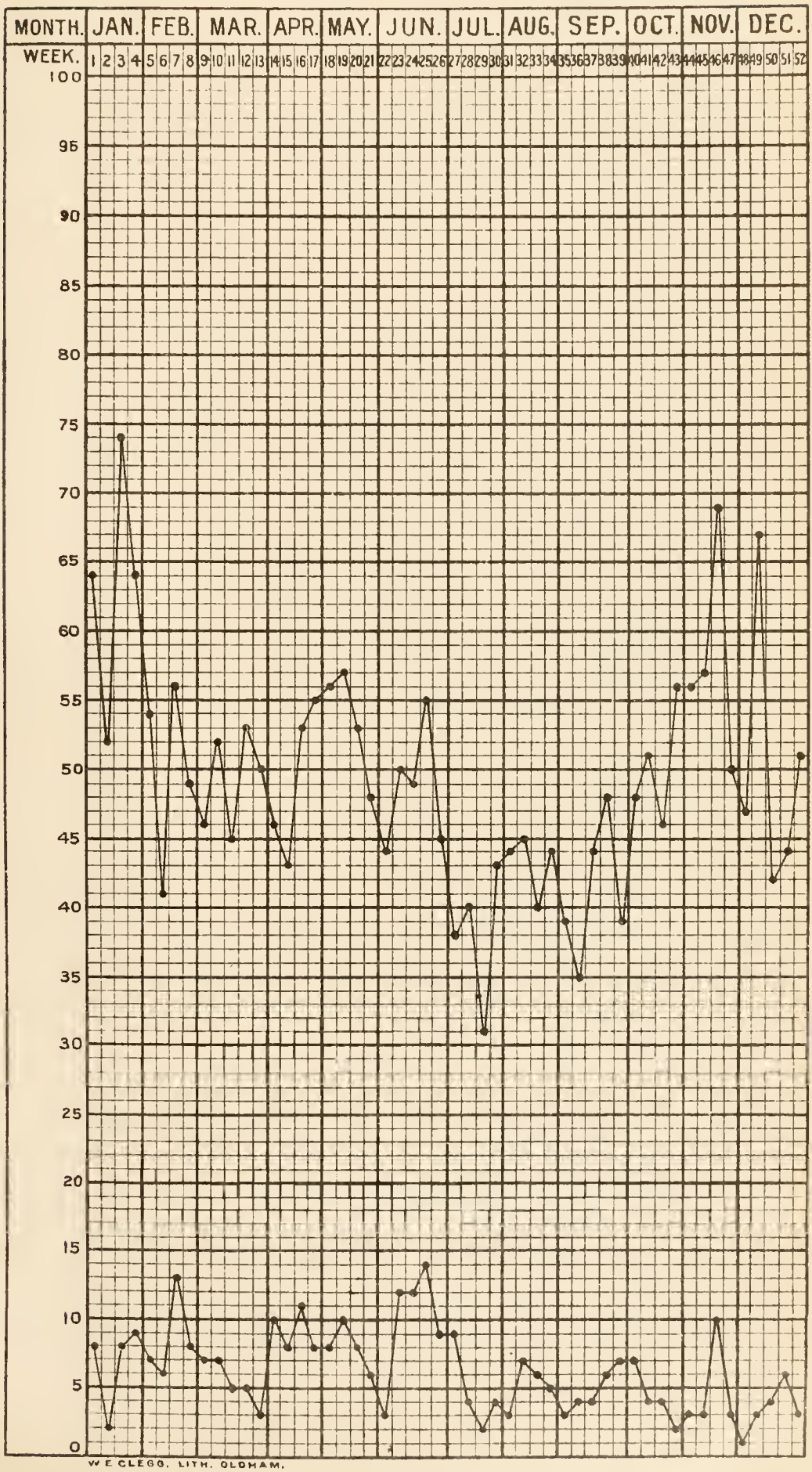
The lowest rates were in July and August.

INFANTILE MORTALITY.

During the year 1903 there were 568 deaths of children under the age of 1 year, compared with 543 in the previous year. This number is equal to a rate of 160 per 1,000 births, instead of 148, and, though an increase, is well below the average rate for the previous ten years, which is 177. The rate for 1902 was the lowest ever recorded in the Borough.

Though the first two years' work of the Female Inspectors is synchronous with the lowered rate of infantile mortality, it must not be assumed that it is altogether the result of their visits and instructions. The principal cause of the decrease in these deaths is due to the fact that the deaths from epidemic Diarrhœa both in 1902 and 1903 have been exceedingly few. This disease is exceedingly fatal among infants, and is only present in an epidemic form during a continuance of hot weather, and in both years such a climatic condition was entirely absent. The

BOROUGH OF OLDHAM.



W E CLEGG, LITH. OLDHAM.

instructions given by the Female Inspectors in the feeding of infants will undoubtedly tend to diminish the prevalence of the disease, but as it is not possible to expect that *all* mothers will carry out these instructions, we shall continue to have the epidemics of Diarrhœa when the climatic conditions are favourable.

Respecting the principal causes of death in infants, 94 are registered as due to congenital causes, such as premature birth and malformations. There is a considerable diminution in the deaths, during this year and last, from the various forms of Wasting Disease and Convulsions; still, 51 are put down to the former and 30 to the latter cause. As these diseases are in the majority of instances attendant upon improper feeding, the reduction may not improbably be due to the work of the Female Inspectors. Diarrhœa only caused 26 of these infantile deaths, but other Zymotics, principally Whooping Cough, are credited with 70.

Pneumonia and Bronchitis caused 149 deaths, an increase on the previous year, and possibly due to the cold and damp weather almost throughout the year. The instruction given by the Inspectors should eventually have an effect on these deaths also, as improperly fed and unsatisfactorily clothed infants are especially liable to contract and succumb from either of these complaints.

The instruction, which is being given to the elder girls in the elementary schools in other towns, as to the management of infants (washing, feeding, and clothing), will probably have a marked effect in reducing infantile mortality in those towns carrying out this course.

In Table No. 3 it will be seen that more than double the number of children who were fed by the bottle or on

artificial food died than those who were nourished at the breast.

In comparing the various Wards, both Hartford and Coldhurst have the exceptionally high infantile mortality rates of 350 and 255 respectively, and St. Peter's and Werneth the low ones of 96 and 99 per 1,000 births.

In comparison with the other large Lancashire towns, Oldham takes the fourth position, the rates being as follows:—Bolton, 152; Blackburn, 157; Liverpool, 159; Oldham, 160; Preston, 161; Salford, 167; Manchester, 169, and Burnley, 217. The average for the 33 large towns of England is 149, and for the 76 largest towns 144.

PHTHISIS.

In 1902 the death rate from this disease was the lowest ever recorded in the Borough. During the present year the rate has slightly increased, being 1·6 instead of 1·5 per 1,000 of the population. There is also a slight increase in the number of deaths due to other forms of Tuberculosi .

The Ward which shows the greatest incidence of the disease is Mumps, where the rate, 2·9, is considerably above the average. The rate for Coldhurst Ward, which generally has a high rate, is this year 1·9.

St. Peter's, where the highest rate was recorded in 1902, has this year the lowest rate; and it is somewhat singular that St. Mary's Ward, with the greatest density of population, has again a low rate from this disease.

Owing to the presence of Smallpox in the town for above half the year, and in consequence the enormous

amount of additional work in connection, it was not possible to institute any special measure with a view to diminishing the extension of this disease, beyond disinfection of houses or rooms, in certain cases, after removal or death, and, as far as possible, limiting the sale of tuberculous meat and milk in the Borough. When any special measures are undertaken, which I hope ere long will be the case, it must not be expected that they can be carried on without cost. The public, however, have only to realise the enormous amount of money they are paying at the present time in the form of Poor Law relief to those disabled by this disease, or to the widows and orphans of those who have succumbed to it; through the sick clubs and charities; by landlords and shopkeepers in the loss of rents and unpaid bills of families who are affected by it, and in many other ways, to acquiesce readily in spending a considerable sum in preventing its spread. That the disease is gradually decreasing in the Borough will be seen in Table No. 10, and as people know more of the manner in which the disease spreads, and can be induced to adopt methods to prevent its extension, I anticipate a further considerable decrease. With a view of extending this knowledge I suggested last year that one of the public lectures at the Free Library should be on "Consumption," and I again make a similar suggestion.

DIARRHŒA.

As already has been mentioned this disease is only present in an epidemic form when the temperature of the soil is sufficiently high to allow the bacillus, which causes it, to multiply freely, and during no single week during the year did the 4ft. thermometer, which is usually taken as the guide, reach the required temperature.

Only 47 deaths were attributed to this cause, and of these 35 were in children under the age of 5, and 28 under the age of 1 year.

The death rate from this disease in Oldham is 0·42 per 1,000 inhabitants, and is lower than in any of the other large Lancashire towns. The rate for the 76 large towns in England is 0·71.

None of the Wards were entirely free from deaths due to this cause, and in none was there any excessive number. In infants there is the usual preponderance among those fed by the bottle over those fed by natural means, three, out of 26, only being in children entirely breast fed.

INQUESTS.

With his usual kindness the Coroner (Dr. G. Thomson) has filled in the particulars enumerated in Table 14. A larger number of inquests were held than in the previous year, and of the 175, Suicide was returned as the cause of death in 18 cases, Accident in 62 cases, and Natural Causes in 86 cases.

METEOROLOGICAL REPORT.

JANUARY.—The mean barometric pressure was 29·94 and the mean temperature 38. The minimum temperature recorded on the grass was 16 degrees, and the maximum in the sun was 52 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 43 to 40 degrees. Rain fell on 12 days out of 28, the total rainfall amounting to 3·51 inches.

FEBRUARY.—The mean barometric pressure was 30·08 and the mean temperature 42. The minimum temperature recorded on the grass was 21 degrees, and the maximum in the sun 53 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 41 to 42 degrees. Rain fell on 18 days, the total rainfall for the month amounting to 4·58 inches.

MARCH.—The mean barometric pressure was 29·75 inches, and the mean temperature 43 degrees. The minimum temperature on the grass was 26 degrees, and the maximum temperature in the sun was 65 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 42 to 41 degrees. Rain fell on 23 days, the total rainfall being 5·54 inches.

APRIL.—The mean barometric pressure was 29·90 inches, and the mean temperature 42 degrees. The minimum temperature on the grass was 22 degrees, and the maximum temperature in the sun was 68 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 43 to 44 degrees. Rain fell on 15 days, the total rainfall amounting to 1·65 inches.

MAY.—The mean barometric pressure was 29·96 inches, and the mean temperature 50 degrees. The minimum temperature recorded on the grass was 27 degrees, and the maximum in the sun 78 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 44 to 48 degrees. Rain fell on 17 days, the total rainfall amounting to 5·16 inches.

JUNE.—The mean barometric pressure was 30·10 inches, and the mean temperature 54 degrees. The minimum temperature recorded on the grass was 27 degrees, and the maximum in the sun 89 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 48 to 51 degrees. Rain fell on 9 days, the total rainfall amounting to 2·42 inches.

JULY.—The mean barometric pressure was 29·97 inches, and the mean temperature 58 degrees. The minimum temperature recorded on the grass was 34 degrees, and the maximum in the sun 84 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 51 to 54 degrees. Rain fell on 18 days, the total rainfall amounting to 6·23 inches.

AUGUST.—The mean barometric pressure was 29·82 inches, and the mean temperature 56 degrees. The minimum temperature recorded on the grass was 38 degrees, and the maximum in the sun 73 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 54 to 53 degrees. Rain fell on 22 days, the total rainfall amounting to 7·56 inches.

SEPTEMBER.—The mean barometric pressure was 30·27 inches, and the mean temperature 55 degrees. The minimum temperature recorded on the grass was 30 degrees,

and the maximum in the sun 76 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 53 to 52 degrees. Rain fell on 18 days, and the total rainfall amounted to 7·54 inches.

October.—The mean barometric pressure was 29·59 inches, and the mean temperature 49 degrees. The minimum temperature recorded on the grass was 28 degrees, and the maximum in the sun 68 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 52 to 49 degrees. Rain fell on 28 days, and the total rainfall amounted to 12·07 inches.

November.—The mean barometric pressure was 30·11 inches, and the mean temperature 44 degrees. The minimum temperature recorded on the grass was 23 degrees, and the maximum in the sun 60 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 49 to 46 degrees. Rain fell on 23 days, and the total rainfall amounted to 5·44 inches.

December.—The mean barometric pressure was 29·70 inches, and the mean temperature was 37 degrees. The minimum temperature on the grass was 17 degrees, and the maximum in the sun 50 degrees. The temperature recorded by the thermometer 4 feet below the surface ranged from 46 to 42 degrees. Rain fell on 13 days out of 33, and the total rainfall amounted to 1·91 inches.

VITAL STATISTICS, 1903.

SUMMARY.

Population estimated by the Registrar General to the middle of the year			138,786
Births registered in the 52 weeks ending January 2nd, 1904... ...	Males ...	1,782	3,545
	Females ...	1,763	
Deaths registered in the 52 weeks ending January 2nd, 1904... ...	Males ...	1,293	2,576
	Females ...	1,283	
Deaths from the seven principal Zymotic diseases...			324
Deaths under 1 per 1,000 Births			160
Annual Rate of Births per 1,000 living population.			25·6
Annual Rate of Mortality from all causes per 1,000 living population			18·6
Annual Rate of Mortality per 1,000 living population from the seven principal Zymotic diseases.			2·4

Of the 2,576 deaths registered during the year 1903, 941, or 36·5 per cent., were those of children under 5 years of age.

Principal Causes of Deaths.

Bronchitis	330	Debility, &c.	74
Pneumonia	216	Cancer	91
Phthisis	218	Convulsions	45
Heart Disease... ...	215	Diarrhœa...	47
Measles	43	Premature Birth ...	80
Apoplexy, &c.... ..	137	Whooping Cough ...	111
Diphtheria	54		

TABLE No. 1.

HOUSES BUILT IN THE BOROUGH.

Year.	No. of Houses Built.
March, 1871, to March, 1872	277
,, 1872 ,, 1873	197
,, 1873 ,, 1874	588
,, 1874 ,, 1875	649
,, 1875 ,, 1876	867
,, 1876 ,, 1877	1181
,, 1877 ,, 1878	1010
,, 1878 ,, 1880	989
,, 1880 ,, 1881	746
,, 1881 ,, 1882	738
,, 1882 ,, 1883	644
,, 1883 ,, 1884	631
,, 1884 ,, 1885	737
,, 1885 ,, 1886	780
,, 1886 ,, 1887	657
,, 1887 ,, 1888	711
,, 1888 ,, 1889	371
,, 1889 ,, 1890	218
,, 1890 ,, 1891	214
,, 1891 ,, 1892	190
,, 1892 ,, 1893	227
,, 1893 ,, 1894	362
,, 1894 ,, 1895	284
,, 1895 ,, 1896	294
,, 1896 ,, 1897	360
,, 1897 ,, 1898	505
,, 1898 ,, 1899	455
,, 1899 ,, 1900	608
,, 1900 ,, 1901	543
,, 1901 ,, 1902	439
,, 1902 ,, 1903	375

TABLE No. 2.

Deaths under 1 Year from Various Causes.

Ages	Premature Births	Congenital Malformation	Atrophy, Inanition, and Debility	Diarrhœa	Other Zymotics	Convulsions	Dentition	Tubercular Diseases	Pneumonia and Bronchitis	Other Causes	Totals
Under 1 mon.	75	9	28	1	2	10	...	...	9	30	164
1-2 months	5	2	10	2	7	3	...	...	15	20	64
2-3 ,,	1	1	2	3	2	3	...	...	15	10	37
3-4 ,,	...	...	2	2	5	2	...	1	18	15	45
4-5 ,,	...	...	1	3	4	5	1	5	12	12	43
5-6 ,,	...	...	2	4	3	3	1	2	22	4	41
6-7 ,,	...	1	2	2	6	1	1	...	12	7	32
7-8 ,,	...	...	1	2	10	1	2	1	13	8	38
8-9 ,,	...	.	2	3	7	...	2	1	8	4	27
9-10 ,,	...	...	...	2	10	...	...	2	8	4	26
10-11 ,,	...	...	...	2	5	..	4	2	7	4	24
11-12 ,,	...	..	1	...	9	2	2	1	10	2	27
Totals ...	81	13	51	26	70	30	13	15	149	120	568

TABLE No. 3.

Deaths under One Year of Age.

Nature of Diseases.	How Fed.					Occupation of Mother.			
	Breast.	Bottle.	Artificial food.	Both Breast and Bottle.	No Food.	Cotton Workers.	Charwoman or Dm'stic Servant	Other Occupation.	Housework.
Zymotic Diseases ...	31	32	1	6	...	12	2	1	55
Diarrhœa	3	21	...	2	...	7	...	1	18
Convulsions and Dentition	19	18	...	2	4	7	...	2	34
Congenital Malformation	2	5	1	...	5	4	2	...	7
Inanition, Debility, or Atrophy	14	27	...	3	7	8	1	1	41
Premature Birth	18	21	6	2	34	9	4	4	64
Tubercular Diseases	2	11	1	...	1	3	...	...	12
Bronchitis and Pneumonia	67	65	6	11	...	15	6	6	122
All other Diseases ...	29	58	8	11	14	13	10	3	94
Totals	185	258	23	37	65	78	25	18	447

TABLE No. 4.

INFANTILE MORTALITY IN THE 33 LARGE TOWNS PER 1000 BIRTHS.

	1903.	Ten Years, 1893-1902.
33 Towns	149	175
London	131	158
West Ham	146	169
Croydon	108	141
Brighton	114	156
Portsmouth	114	162
Plymouth	144	172
Bristol	116	144
Cardiff	122	159
Swansea	165	165
Wolverhampton	141	188
Birmingham	159	188
Norwich	150	181
Leicester	160	187
Nottingham	165	185
Derby	128	154
Birkenhead	156	172
Liverpool	159	189
Bolton	152	175
Manchester	169	188
Salford	167	202
OLDHAM	**160**	**177**
Burnley	217	210
Blackburn	157	199
Preston	161	232
Huddersfield	120	146
Halifax	122	148
Bradford	148	168
Leeds	153	179
Sheffield	182	186
Hull	162	176
Sunderland	157	175
Gateshead	159	174
Newcastle	165	173

TABLE No. 5.

SHOWING BIRTH, DEATH, AND ZYMOTIC DEATH RATES in 33 Large Towns during the year 1903.

CITIES AND BOROUGHS.	Estimated Population.	Birth Rates.	Death Rates.	Zymotic Death Rates.
33 Towns	11,764,384	29·0	16·7	1·83
London	4,613,812	28·4	15·7	1·77
West Ham	281,894	33·7	15·3	2·65
Croydon	141,157	26·3	11·8	1·08
Brighton	125,405	24·3	14·3	0·85
Portsmouth	194,960	27·9	14·7	1·50
Plymouth	112,022	25·5	16·5	1·16
Bristol	338,895	27·4	14·3	1·08
Cardiff	172,598	30·5	14·0	1·32
Swansea	95,489	32·0	18·6	2·30
Wolverhampton	96,947	30·5	15·5	1·97
Birmingham...	533,039	31·8	17·8	2·32
Norwich	114,351	27·9	15·2	1·13
Leicester	220,272	27·4	14·2	1·46
Nottingham...	245,985	28·3	16·9	2·01
Derby	118,707	27·2	13·6	0·87
Birkenhead	113,598	30·8	16·8	2·07
Liverpool	716,810	33·4	20·5	2·51
Bolton	173,401	27·0	17·5	1·99
Manchester	553,486	32·1	19·7	2·54
Salford	226,480	32·3	19·0	2·86
OLDHAM	**138,786**	**25·6**	**18·6**	**2·34**
Burnley...	99,469	27·2	19·2	2·82
Blackburn	131,218	25·1	15·7	1·49
Preston...	114,404	30·4	18·7	3·09
Huddersfield	94,963	23·8	16·7	0·84
Halifax	106,754	21·1	15·0	0·72
Bradford	283,412	23·3	16·4	1·36
Leeds	443,559	29·4	16·6	1·76
Sheffield	425,528	33·2	18·6	3·10
Hull	249,639	31·3	16·9	2·19
Sunderland	149,572	35·1	19·9	2·37
Gateshead	115,531	35·8	16·7	1·87
Newcastle	222,241	31·1	19·2	1·22

TABLE No. 6.—Showing Population, Births and Birth Rates, Deaths and Death Rates.—1903.

WARD.	Population.	Area in Acres.	Density (Persons to an Acre).	BIRTHS.			Birth Rate per 1,000 Population.	DEATHS.			Death Rate per 1,000 Population.
				Males.	Females.	Total.		Males.	Females.	Total.	
St. Mary's	10,717	113	94·8	182	188	370	34·6	119	108	227	21·2
St. Peter's	11,759	271	43·4	120	120	240	20·5	86	92	178	15·2
Werneth	12,231	262	46·7	190	194	384	31·5	89	102	191	15·7
Westwood	13,260	280	47·3	185	191	376	28·4	118	131	249	18·8
St. Paul's	12,142	457	26·6	174	163	337	27·8	103	116	219	18·1
Coldhurst	10,358	130	79·7	81	99	180	17·4	123	106	229	22·2
Hartford	12,486	207	60·3	91	89	180	14·5	139	91	230	18·5
Hollinwood.....	8,829	420	21·0	151	166	317	36·3	103	70	173	19·7
Clarksfield	14,946	623	24·0	204	166	370	24·8	110	132	242	16·2
Mumps	8,336	125	66·7	118	95	213	25·6	96	102	198	23·8
St. James'	10,687	1,015	10·5	122	122	244	22·9	93	103	196	18·4
Waterhead	13,035	826	15·8	164	170	334	25·7	114	130	244	18·8
Total.....	138,786	4,729	29·3	1,782	1,763	3,545	25·6	1,293	1,283	2,576	18·6

TABLE No. 7.

Death Rates per 1,000 population in the various Wards, from various Diseases.

1903.

Ward.	All causes	Seven Principal Zymotic Diseases	Phthisis	Bronchitis	Pneumonia	Deaths under 1 year to 1000 births
St. Mary's	21·2	2·7	1·2	2·8	2·1	140
St. Peter's	15·2	1·5	1·0	1·2	1·3	96
Werneth	15·7	2·2	1·4	2·3	1·2	99
Westwood	18·8	2·1	1·6	3·3	0·8	149
St. Paul's	18·1	1·9	1·3	2·5	1·4	154
Coldhurst	22·2	3·0	1·9	2·6	1·9	255
Hartford	18·5	1·9	1·8	2·2	2·0	350
Hollinwood	19·7	2·8	1·6	2·3	1·6	136
Clarksfield	16·2	1·9	1·3	1·7	1·0	154
Mumps	23·8	2·9	2·9	4·4	2·0	164
St. James'	18·4	3·1	1·5	2·2	2·2	156
Waterhead	18·8	2·6	1·8	1·7	1·5	195
Borough ...	18·6	2·4	1·6	2·4	1·6	160

TABLE No. 8.

Names of Localities.	Borough of Oldham.			
Year.	Population estimated to middle of each Year.	Births Registered.	Deaths at all Ages.	Deaths under 1 Year.
1895	133,888	3873	3092	737
1896	134,475	3969	2953	726
1897	135,045	3793	2786	696
1898	135,617	3749	2598	654
1899	136,210	3732	3078	739
1900	136,797	3691	3000	637
1901	137,382	3374	2696	584
1902	138,091	3659	2685	543
Averages of Years 1895 to 1902	135,938	3730	2861	664
1903	138,786	3545	2576	568

Names of Localities.	St. Mary's.				St. Peter's.				Werneth.			
Year.	Population estimated to middle of each Year.	Births Registered.	Deaths at all Ages.	Deaths under 1 Year.	Population estimated to middle of each Year.	Births Registered.	Deaths at all Ages.	Deaths under 1 Year.	Population estimated to middle of each Year.	Births Registered.	Deaths at all Ages.	Deaths under 1 Year.
1895	10,520	335	297	85	11,770	287	269	59	11,903	298	215	41
1896	10,543	350	300	82	11,764	282	209	44	11,940	318	187	39
1897	10,567	347	238	48	11,758	290	209	57	11,978	321	205	48
1898	10,591	355	240	69	11,752	289	197	44	12,015	350	195	44
1899	10,614	373	249	68	11,746	297	228	43	12,053	342	220	50
1900	10,638	392	262	68	11,740	293	229	39	12,090	330	228	36
1901	10,662	369	252	51	11,730	275	201	44	12,128	358	203	40
1902	10,691	379	245	56	11,722	269	232	40	12,171	348	204	37
Averages of Years 1895 to 1902	10,603	362	260	66	11,748	285	222	46	12,035	333	207	42
1903	10,717	370	227	52	11,759	240	178	23	12,231	384	191	38

	Westwood.				St. Paul's.				Coldhurst.			
1895	12,176	373	259	65	10,842	285	254	72	10,631	332	301	82
1896	12,306	371	268	68	11,000	325	238	83	10,592	328	276	61
1897	12,438	346	251	70	11,162	305	236	71	10,553	310	250	59
1898	12,571	324	238	77	11,326	317	208	53	10,514	298	249	63
1899	12,706	324	309	70	11,493	325	242	71	10,475	280	297	63
1900	12,842	334	266	66	11,661	345	243	66	10,437	289	314	62
1901	13,009	322	256	65	11,829	334	233	47	10,398	224	258	51
1902	13,166	401	232	41	12,017	294	202	52	10,358	224	233	44
Averages of Years 1895 to 1902	12,652	349	260	65	11,416	316	232	64	10,495	286	272	61
1903	13,260	376	249	56	12,142	337	219	52	10,358	180	229	46

TABLE No 8—Continued.

Names of Localities.	Hartford.				Hollinwood.				Clarksfield.			
Year.	Population estimated to middle of each Year.	Births Registered	Deaths at all Ages.	Deaths under 1 Year	Population estimated to middle of each Year.	Births Registered.	Deaths at all Ages.	Deaths under 1 Year.	Population estimated to middle of each Year.	Births Registered.	Deaths at all Ages.	Deaths under 1 Year.
1895	12,586	366	300	70	8,049	314	166	43	12,680	365	241	53
1896	12,572	349	274	61	8,145	297	149	42	12,952	409	264	65
1897	12,558	323	288	61	8,262	308	147	45	13,229	370	234	59
1898	12,544	283	254	51	8,342	280	145	26	13,513	397	231	69
1899	12,539	269	263	70	8,442	300	201	54	13,802	369	276	61
1900	12,516	230	286	49	8,543	286	191	40	14,098	357	291	64
1901	12,495	153	258	65	8,644	267	178	41	14,426	370	227	44
1902	12,477	214	252	56	8,760	298	173	45	14,752	400	275	45
Averages of Years 1895 to 1902	12,536	273	272	60	8,398	294	169	42	13,681	380	255	57
1903	12,486	180	230	63	8,829	317	173	43	14,946	370	242	57
	Mumps.				St. James's.				Waterhead.			
1895	8,884	224	215	40	10,708	308	243	60	12,964	386	332	67
1896	8,805	240	227	53	10,702	308	232	54	12,966	392	329	74
1897	8,726	247	210	55	10 695	255	220	52	12,968	371	298	71
1898	8,648	220	211	51	10,688	281	193	40	12,970	355	237	67
1899	8 570	209	248	52	10,682	309	235	67	12,971	335	310	70
1900	8,494	222	210	38	10,676	272	209	41	12,973	341	271	68
1901	8,417	158	188	43	10,668	234	213	39	12,976	330	229	54
1902	8,337	207	185	37	10,661	283	192	28	12,979	342	260	62
Averages of Years 1895 to 1902	8,610	216	212	46	10,685	279	217	48	12,971	356	283	67
1903	8,336	213	198	35	10,687	244	196	38	13,035	334	244	65

TABLE No. 9.—For Whole District.

Year.	Population estimated to middle of each Year.	Births.		Total Deaths Registered in the District.				Total Deaths in Public Institutions in the District.	Deaths of Non-residents register'd in Public Institutions in the District.	Deaths of residents register'd in Public Institutions beyond the District.	Nett Deaths at all Ages belonging to the District.	
				Under 1 Year of Age.		At all Ages.						
		Number	Rate.	Number	Rate per 1,000 Births register'd	Number	Rate.				Number	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1893	132,738	3895	29·4	726	186	2912	21·9	340	52	...	2860	21·6
1894	133,313	3768	28·4	610	162	2644	19·8	417	87	17	2574	19·4
1895	133,888	3873	29·0	737	190	3186	23·8	554	116	22	3092	23·1
1896	134,475	3969	29·1	726	183	3058	22·7	383	105	..	2953	21·6
1897	135,045	3793	28 2	696	183	2863	21·2	388	77	...	2786	20·7
1898	135,617	3749	27·7	654	174	2693	19·9	395	101	6	2598	19·2
1899	136,210	3732	27 5	739	198	3204	23·5	487	129	3	3078	22·7
1900	136,797	3691	27·1	637	173	3112	22·7	489	129	17	3000	22·0
1901	137,382	3374	24·6	584	173	2806	20·4	427	121	11	2696	19·7
1902	138,091	3659	26·1	543	148	2795	19·9	461	129	19	2685	19·1
Averages for years 1893-1902	135,356	3750	27·7	665	177	2927	21·6	434	105	9	2832	20·9
1903	138,786	3545	25·6	568	160	2690	19·4	337	122	8	2576	18·6

Area of District in Acres, 4,729.
At Census of 1901.—Total population at all ages, 137,246. Number of inhabited houses, 29,907.
Average number of persons per house, 4·588.

TABLE No. 10.

Showing the Birth-rates, also Rates of Mortality from all causes, from the seven principal Zymotic Diseases, and from Phthisis, Bronchitis, and Pneumonia, during the years 1877-1903.

Years	Population	RATES PER 1,000 POPULATION FROM						Deaths under 1 year to 1000 births
		Births	Deaths all causes	7 princip'l Zymotic Diseases	Phthisis	Bronchitis	Pneumonia	
1877	99,557	40·2	24·9	3·0	2·2	3·3	1·6	162
1878	102,573	39·8	26·9	5·7	2·3	3·5	1·5	175
1879	105,679	36·2	22·7	2·8	2·1	3·4	1·8	157
1880	108,880	35·4	24·6	4·3	2·3	3·3	1·7	181
1881	112,176	35·3	22·7	2·3	2·3	3·4	2·0	152
Average 5 y'rs		**37·4**	**24·3**	**3·6**	**2·2**	**3·4**	**1·7**	**165**
1882	114,017	35·3	24·9	2·8	2·3	3·4	2·1	182
1883	115,888	36·0	22·5	1·5	2·3	2·9	1·8	159
1884	117,791	37·4	25·9	3·7	2·6	2·8	2·3	182
1885	119,724	37·5	23·2	2·1	2·4	2·7	2·2	167
1886	121,690	34·7	24·2	3·0	2·3	3·1	1·9	175
Average 5 y'rs		**36·2**	**24·1**	**2·6**	**2·4**	**3·0**	**2·0**	**173**
1887	123,687	33·8	25·8	4·5	2·0	3·2	2·1	187
1888	125,717	33·3	22·3	2·2	1·9	2·6	2·6	151
1889	127,781	31·5	22·7	3·3	1·9	2·8	2·6	178
1890	129,878	31·0	24·4	2·5	2·0	3·4	3·1	180
1891	132,010	30·8	25·6	2·3	1·9	3·7	3·3	193
Average 5 y'rs		**32·1**	**24·2**	**2·9**	**1·9**	**3·1**	**2·7**	**178**
1892	132,171	29·5	22·3	2·7	2·1	2·8	2·3	177
1893	132,738	29·4	21·6	2·6	1·9	2·3	2·4	186
1894	133,313	28·4	19·4	1·9	2·0	2·1	1·9	162
1895	133,888	29·0	23·1	2·9	1·8	2·7	2·4	190
1896	134,475	29·1	21·6	2·9	1·7	2·5	2·3	183
Average 5 y'rs		**29·1**	**21·6**	**2·6**	**1·9**	**2·5**	**2·3**	**180**
1897	135,045	28·2	20·7	2·7	1·7	2·0	2·2	183
1898	135,617	27·7	19·2	2·4	1·7	2·1	2·2	174
1899	136,210	27·5	22·7	2·4	1·6	2·8	2·6	198
1900	136,797	27·1	22·0	2·7	1·9	2·8	2·3	173
1901	137,382	24·6	19·7	2·5	1·6	2·2	2·2	173
Average 5 y'rs		**27·0**	**20·9**	**2·5**	**1·7**	**2·4**	**2·3**	**180**
1902	138,091	26·1	19·1	2·0	1·5	2·1	2·0	148
1903	138,786	25·6	18·6	2·4	1·6	2·4	1·6	160

TABLE No. 11.

Showing the number of deaths from the Seven Principal Zymotic Diseases in the Borough of Oldham, during the years 1877-1903.

Year	Population	Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever Typhus and Typhoid	Diarrhœa	Total Deaths
1877	99,557	19	11	58	11	111	28	58	296
1878	102,573	1	114	240	26	77	36	93	587
1879	105,679	...	9	136	19	60	25	46	295
1880	108,880	..	96	131	9	70	28	142	476
1881	112,176	9	7	87	10	36	39	69	257
1882	114,017	4	69	58	10	77	26	74	318
1883	115,888	2	6	21	9	38	26	76	178
1884	117,791		193	33	7	36	22	149	440
1885	119,724	..	54	20	14	104	18	46	256
1886	121,690	.	89	32	29	57	30	134	371
1887	123,687	...	176	103	62	100	25	89	555
1888	125,717	13	53	66	36	40	24	43	275
1889	127,781	...	126	54	16	127	20	78	421
1890	129,878	...	95	25	6	82	15	96	319
1891	132,010	...	97	25	18	71	27	68	306
1892	132,171	15	139	42	18	68	16	56	354
1893	132,738	65	29	16	16	56	26	140	348
1894	133,313	22	56	21	39	58	15	46	257
1895	133,888	23	97	16	25	57	26	143	387
1896	134,475	...	165	56	34	53	23	72	403
1897	135,045	...	96	21	9	77	19	145	367
1898	135,617	.	87	24	10	65	23	114	323
1899	136,210	...	49	46	21	54	18	138	326
1900	136,797	3	108	54	20	89	17	76	367
1901	137,382	.	73	41	13	30	9	171	337
1902	138,091	7	103	39	49	29	13	42	282
1903	138,786	23	43	30	58	111	12	47	324

TABLE No 12.

Weekly Means of Meteorological Observations for the year 1903.

Date 1903	Barometer reduced to Sea Level at 32·0	Thermometer	Hygrometer Dry	Hygrometer Wet	% of Saturation	Temperatures. Maximum in Shade	Minimum in Shade.	Maximum in Sun Black Bulb	Maximum in Sun Black Bulb in Vacuo	Minimum on Grass.	Temperature 12in. below surface.	Temperature 4 ft below surface.	Rainfall 12in. above ground.	Number of Days on which rain fell	Clouds covered = 10 clear = 0
January 10	29·53	41	41	39	85	46	37	47	48	30	37	42	2·02	7	9
17	30·36	30	30	30	100	34	27	37	50	20	33	42	.	...	3
24	30·16	38	40	38	85	42	35	45	52	28	31	41	·78	2	8
31	30·01	45	44	43	92	47	41	48	53	35	38	40	·71	3	10
February 7	30·11	41	41	40	92	45	36	46	53	31	37	41	·45	4	9
14	30·31	46	46	45	93	50	42	*	63	38	41	41	·71	5	9
21	30·32	44	44	42	85	47	40	*	57	35	40	42	·59	3	5
28	29·59	41	40	38	85	48	35	*	61	31	39	42	2·83	6	8
March 7	29 60	39	39	37	84	44	34	49	60	28	36	42	1·69	7	8
14	30·02	42	42	40	85	45	37	51	66	31	37	42	1·01	4	8
21	29·83	43	44	41	78	47	38	48	59	33	39	42	1·67	7	9
28	29 56	50	49	45	73	57	42	57	76	38	42	42	·42	2	6
April 4	29·99	45	45	42	78	49	38	52	72	32	40	43	·96	6	6
11	30·13	46	46	43	78	50	41	55	70	35	42	44	·26	4	7
18	30·02	38	38	33	61	44	31	54	79	24	39	43	·74	4	3
25	29·82	42	42	38	64	46	32	54	75	26	38	43	...	.	7
May 2	29·53	48	48	44	73	52	43	62	83	38	44	43	1·52	6	7
9	29·54	47	47	46	93	52	43	58	76	38	46	44	2·84	7	9
16	29·99	47	47	44	79	50	43	55	69	35	44	45	·50	4	9
23	30·07	54	53	48	69	58	45	65	86	36	46	45	·64	3	7
30	30·23	60	59	51	57	65	46	76	101	39	52	47	·10	1	0

June	6	30·25	59	58	52	66	66	49	77	103	42	55	49	...	...	6
	13	30·14	55	55	49	65	62	47	72	100	42	55	50	·10	1	4
	20	29·82	51	51	46	68	54	44	61	82	38	51	51	·93	4	8
	27	30·20	60	60	54	67	64	51	64	83	42	53	51	1·32	3	2
July	4	30·15	61	61	55	72	67	53	76	103	47	57	51	·24	3	7
	11	30·13	60	59	54	71	64	51	73	99	46	55	53	·39	3	9
	18	29.82	58	58	54	76	63	52	70	85	48	56	53	2·43	6	9
	25	29·96	60	60	55	71	64	52	74	101	48	58	54	1·27	1	6
August	1	29·79	57	57	54	81	61	52	68	90	48	56	54	1·97	6	9
	8	29·98	59	59	54	71	64	51	71	95	46	56	54	1·67	4	8
	15	29·63	56	56	54	87	64	52	71	96	46	55	54	1·28	5	9
	22	29·78	55	55	51	75	59	50	64	86	45	55	54	3·15	6	7
	29	29·91	57	56	53	81	59	50	66	84	46	53	54	1·31	5	8
Septem.	5	29·98	57	57	54	81	62	51	67	86	47	54	53	1·87	5	8
	12	29·86	53	53	49	74	58	47	63	84	40	52	53	4·59	6	7
	19	30·33	52	52	47	69	56	44	65	87	35	48	53	·33	3	2
	26	30·16	60	61	57	77	64	55	72	92	48	53	52	·43	3	6
October	3	30·03	57	57	56	91	62	51	67	84	40	53	52	1·22	5	7
	10	29·68	50	50	48	86	54	47	59	72	40	51	52	2·59	7	9
	17	29·50	50	50	47	79	55	45	55	66	41	47	52	3·94	7	8
	24	29·70	49	48	47	93	52	45	55	65	40	47	50	1·98	6	9
	31	29·49	48	48	45	79	54	44	54	64	39	45	50	2·81	6	7
Novem.	7	30·40	45	46	45	93	50	41	55	68	33	44	49	1·59	3	5
	14	30·13	48	48	47	93	50	44	52	59	39	43	48	1·03	6	8
	21	29·97	40	40	38	85	46	34	47	58	29	39	47	·94	6	7
	28	29·93	44	44	43	93	48	40	49	59	35	41	46	1·68	7	8
Decem.	5	29·53	34	33	32	88	40	30	41	48	25	35	45	·90	3	7
	12	29·21	40	40	39	92	42	35	42	48	31	36	44	·91	5	8
	19	29·65	40	40	37	77	43	37	44	50	31	36	43	·24	4	7
	26	29·98	40	40	39	89	42	38	46	51	32	39	43	·04	1	8
1904																
January	2	30·12	33	33	32	88	35	30	40	47	24	34	42	·02	1	3
Means		29·88	48	46	45	93	54	43	57	94	36	45	47	Totals. 63·61	216	7

TABLE No. 13.

Prices of Coal, Bread, Flour, Butchers' Meat, and Potatoes, and the number of Paupers relieved in Oldham, 1885-1903.

	Coal per Ton.	Bread per dozen lbs.	Flour, per load of 280 lbs.	Meat per lb.	Potatoes, per load of 252 lbs.	Weekly No. of Indoor Poor.
	s. d.	d.	s. d.	d.	s. d.	
1885	7 9	11¼	. .	5	6 5	890
1886	8 0	11¼	...	5¼	7 4	931
1887	7 6	...	24 6	4½	8 10	910
1888	7 6	..	25 3	5	6 4	936
1889	8 4	.	26 10	5	7 6	946
1890	10 10	...	26 10	4⅞	6 11	921
1891	10 7	...	29 2	4⅞	10 2	901
1892	9 7	...	26 3	4⅝	7 4	937
1893	11 7	...	21 6	4½	6 6	1,011
1894	9 4	...	18 4	4¼	6 6	1,075
1895	7 8	...	17 0	4⅛	6 9	1,089
1896	7 4	...	20 0	3¾	5 11	1,037
1897	7 4	...	24 7	3½	6 5¾	1,061
1898	7 8	...	27 5	3½	9 5	1,131
1899	11 9	...	19 11	3¾	7 6	1,136
1900	13 7	...	21 4	4⅝	9 9	1,167
1901	12 7	...	21 4½	4⅜	9 0½	1,198
1902	10 9¼	...	21 9¾	4⅞	7 0½	1,175
1903	9 5	...	22 6	4¾	10 7½	1,213

TABLE No. 14.

Return of Inquests held in Oldham, touching the cause of death of any person, for the year ended 31st December, 1903.

INQUESTS.	Males.	Females.
Infants (Legitimate), under 1 year	18	7
,, 1 year and under 7 years	10	10
Infants (Illegitimate or unknown) under 1 year	1	1
,, 1 year and under 7 years	1	...
Children, 7 years and under 16	8	4
Youths, 16 years and under 25	5	...
Adults, 25 years and under 60	47	19
Aged, 60 years and above	24	20
Total	114	61

VERDICTS.	Males.	Females.
Murder	...	...
Manslaughter	...	.
Suicide, while Insane	12	6
Accidental Death	42	20
Open Verdicts	3	...
Excessive Drinking	2	3
Natural Causes	54	32
Found Drowned	1	...
Stillborn	...	...
Disease aggravated by neglect	...	...
Total	114	61

Total Fees and Costs, £314 13s. 11d.

TABLE

COUNTY BOROUGH

Deaths Registered at Several Groups of Ages from Different Causes

Cause of Death.	AGES.													Totals.
	0 to 1	1 to 5	Total under 5 years	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and upwards	
Classes.														
I.—Specific Febrile, or Zymotic Diseases ...	116	185	301	69	67	60	65	66	15	8	13	2	1	667
II.—Parasitic Diseases ...	2	...	2	...	...	...	...	...		...	...	..	...	2
III.—Dietetic Diseases ...	...	...	...	...	...	1	4	4	..	...	...	...	...	9
IV.—Constitutional Diseases...	1	3	4	4	12	9	22	40	15	18	20	8	1	153
V.—Developmental Diseases...	86	...	86	..	...	...	...	...	...	...	18	27	7	138
VI.—Local Diseases	262	166	428	42	36	61	94	130	122	116	236	99	5	1369
VII.—Deaths from Violence	4	8	12	8	4	9	9	9	3	5	5	2	...	66
VIII.—Deaths from Ill-defined and Not Specified Causes ...	97	11	108	4	1	5	11	15	4	5	13	6	...	172
Totals	568	373	941	127	120	145	205	264	159	152	305	144	14	2576
I.—Specific Febrile, or Zymotic Diseases.														
1. *Miasmatic Diseases.*														
Smallpox	2	...	2	2	...	1	5	7	...	1	4	1	...	23
Measles.....	5	35	40	3	...	..	...	...	...	...	...	...	..	43
Scarlet Fever	1	15	16	14	...	...	...	...	...	...	...	...	...	30
Typhus	...	...	...	...		...	...	...	...	...	...	...	...	...
Whooping Cough	46	60	106	5	...	...	...	...	...	..	...	...	..	111
Diphtheria	5	29	34	18	...	1	...	1	...	..	...	...	...	54
Simple Continued and Ill-defined Fever	..	...	...	...	...	..	...	...	...		...	...	...	...
Enteric or Typhoid Fever	...	1	1	...	...	4	3	2	1	1	...	...	...	12
Tabes Mesenterica	6	6	12	2	1	...	...	..	...	...	...	...	...	15
Tubercular Meningitis, Hydrocephalus	6	14	20	8	3	...	...	...	..	...	...	...	...	31
Phthisis	1	3	4	9	49	44	50	47	8	2	5	...	...	218
Other Forms of Tuberculosis, Scrofula	4	7	11	5	11	5	3	2	1	1	...	1	...	40
Other Miasmatic Diseases.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza	6	2	8	1	2	...	1	3	4	2	1	...	...	22
2. *Diarrhœal Diseases.*														
Simple Cholera	..	...	...	...	...			...	...	...	...	..	...	...
Diarrhœa, Dysentery	28	11	39	1	...	1	1	1	1	...	2	...	1	47

No. 15.

OF OLDHAM.

during 52 Weeks ending January 2nd, 1904.

WARDS.												
St. Mary's	St. Peter's	Werneth	Westwood	St. Paul's	Coldhurst	Hartford	Hollinwood	Clarksfield	Mumps	St. James'	Waterhead	Public Institutions. (R'sidents)
53	39	57	61	48	70	54	47	59	54	56	69	91
...	...	1	...	...	...	...	...	...	..	...	1	...
...	1	1	1	1	1	1	1	...	2	...	...	5
18	21	13	14	12	11	8	8	19	4	11	14	10
11	6	8	14	14	10	14	10	18	11	5	17	3
123	92	98	125	118	122	121	99	120	111	110	130	185
8	9	1	9	8	4	8	4	7	2	4	2	27
14	10	12	25	18	11	24	4	19	14	10	11	16
227	178	191	249	219	229	230	173	242	198	196	244	337
1	1	4	9	1	2	...	...	1	2	1	1	23
2	1	3	3	...	3	1	4	3	5	11	7	4
6	6	1	4	2	1	2	...	5	1	1	1	10
...	...	...	...	...	...	...	...	...	...	..	...	...
10	3	8	4	4	13	13	18	13	6	11	8	1
4	4	8	4	7	7	1	1	3	2	5	8	2
...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	1	2	1	3	1	1	1	...	2	6
2	2	1	4	1	2	1	...	...	...	1	1	2
1	3	3	2	5	7	...	3	3	...	2	2	2
13	12	17	21	16	20	22	14	20	24	16	23	26
6	2	4	4	2	2	5	3	2	3	1	6	8
...	...	...	...	...	...	...	...	...	...	...	..	...
1	...	4	1	1	4	2	...	5	1	2	1	...
...	...	...	..	...	...	...	...	...	...	...	...	...
6	3	3	3	6	4	1	1	2	7	4	7	1

TABLE No. 15—

Cause of Death.	AGES.												Totals.
	0 to 1	1 to 5	Total under 5 years	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and upwards	
3. *Malarial Diseases.*														
Remittent Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ague	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4. *Zoogenous Diseases.*														
Cowpox and Effects of Vaccination	...	...	..	...		...	...	...	...	...	...	...	...	...
Other Diseases, Hydrophobia, Glanders, Splenic Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5. *Venereal Diseases.*														
Syphilis	4	1	5	...	...	...	...	2	...	1	...	...	...	8
Gonorrhœa, Stricture of Urethra	...	...	...	...	...	...	...	...	...	...	...	..	...	...
6. *Septic Diseases.*														
Erysipelas	2	.	2	1	...	1	1	1	...	...	1	...	...	7
Pyæmia, Septicæmia	...	1	1	...	1	...	.	...	...	...	...	...	...	2
Puerperal Fever	...	...	..	...	...	3	1	...	...	...	...	...	...	4
II.—Parasitic Diseases.														
Thrush, and other Vegetable Parasitic Diseases	2	...	2	.	...	...	...	...	...	...	...	...	...	2
Worms, Hydatids, and other Animal Parasitic Diseases.	...	...	...	...	...	...	...	...	...	...	...	..	...	...
III.—Dietetic Diseases.														
Want of Breast Milk, Starvation	...	...	...	...	...	...	...	.	...	...	...	...	...	...
Scurvy	...	...	...	...	...	..	...	...	...	...	...	...	...	...
Chronic Alcoholism	...	...	...	...	...	1	4	3	...	...	...	...	...	8
Delirium Tremens	...	...	...	...	...	...	...	1	...	...	...	..	...	1
IV.—Constitutional Diseases.														
Rheumatic Fever, Rheumatism of the Heart	...	...	...	1	3	2	2	1	...	...	...	...	...	9
Rheumatism	...	1	1	1	2	2	5	...	1	1	2	2	...	17
Gout	...	...	...	...	...	...	...	...	1	1	1	..	...	3
Rickets	1	2	3	...	1	...	...	...	...	...	..	...	...	4
Cancer, Malignant Disease	...	...	...	...	...	4	11	31	10	14	15	5	1	91
Purpura, Hæmorrhagic Diathesis	...	...	...	...	...	...	...	...	...	...	...	1	...	1
Anæmia, Chlorosis, Leucocythæmia	...	...	...	1	4	1	3	2	...	1	1	...	...	13
Glycosuria, Diabetes Mellitus	...	...	...	1	2	...	1	5	3	1	1	...	...	14
Other Constitutional Diseases	...	..	...	...	...	...	...	1	...	...	...	...	...	1

Continued.

WARDS.												
St. Mary's	St. Peter's	Werneth	Westwood	St. Paul's	Coldhurst	Hartford	Hollinwood	Clarksfield	Mumps	St. James'	Waterhead	Public Institutions. (R'sid'nts)
...	...	...	...	..	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	..	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	3	1	...	...	2	...	1	5
...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	1	1	1	1	1	1	...	1	...	...
...	...	1	...	...	...	...	1	...	...	...	...	1
...	2	..	...	...	...	1	...	...	...	...	1	...
...	...	1	...	...	..	...	...	...	...	...	1	...
...	...	...	..	...	...	...	...	..	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...
...	1	1	1	1	1	...	1	...	2	...	...	5
...	...	...	...	...	...	1	...	...	...	...	...	...
2	...	1	...	2	...	...	...	...	...	1	3	1
2	1	2	1	1	2	1	...	4	...	2	1	3
...	1	...	...	...	...	...	...	...	...	1	1	...
1	...	...	2	1	...	...	...	...	...	...	...	...
7	13	9	9	6	7	7	3	15	3	6	6	5
1	...	...	...	...	...	...	...	...	...	...	...	...
2	3	1	...	2	1	...	2	...	...	...	2	1
2	3	...	2	..	1	...	3	...	1	1	1	...
1	...	...	...	...	...	...	...	...	...	...	...	...

TABLE No. 15—

Cause of Death.	AGES.													Totals.
	0 to 1	1 to 5	Total under 5 years	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and upwards	
V.—Developmental Diseases.														
Premature Birth	80	...	80	...	...	...	...	...	...	...	...	...	...	80
Atelectasis	6	...	6	...	...	...	...	...	...	...	...	...	...	6
Congenital Malformations	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Old Age	...	...	...	...	...	...	...	...	...	...	18	27	7	52
VI.— Local Diseases.														
1. *Diseases of Nervous System.*														
Inflammation of Brain or Membranes	6	14	20	3	1	3	1	3	...	1	...	..	...	32
Apoplexy, Softening of Brain, Hemiplegia, Brain Paralysis.	...	...	...	...	...	1	15	13	20	19	55	14	...	137
Insanity, General Paralysis of the Insane	...	...	...	...	...	...	1	2	3	...	...	...	...	6
Epilepsy	...	2	2	...	...	1	...	...	1	3	...	...	...	7
Convulsions	32	13	45	...	...	...	...	...	...	...	...	...	...	45
Laryngismus Stridulus (Spasm of Glottis)	4	1	5	...	...	...	...	...	...	...	..	.	...	5
Disease of Spinal Cord, Paraplegia, Paralysis Agitans	3	1	4	1	...	...	5	2	3	1	7	1	...	24
Other Diseases of Nervous System	...	1	1	...	1	...	4	6	2	2	5	...	...	21
2. *Diseases of Organs of Special Sense.*														
Of Ear, Eye, Nose	5	...	5	1	...	...	...	...	...	...	...	...	...	6
3. *Diseases of Circulatory System.*														
Pericarditis	...	1	1	2	.	...	...	...	...	...	..	...	...	3
Acute Endocarditis	...	..	...	3	1	...	1	...	1	...	...	...	...	6
Valvular Diseases of Heart	2	...	2	4	3	4	7	13	6	6	8	7	...	60
Other Diseases of Heart	4	3	7	1	1	10	12	22	16	19	46	20	1	155
Aneurism	...	...	...	...	...	...	...	1	1	...	1	...	...	3
Embolism, Thrombosis	...	...	...	...	..	1	...	...	1	...	1	...	...	3
Other Diseases of Blood Vessels	3	...	3	..	...	1	...	1	...	1	10	8	1	25
4. *Diseases of Respiratory System.*														
Laryngitis	1	6	7	1	...	...	...	..	...	...	...	...	...	8
Croup	1	5	6	2	...	...	..	...	...	...	...	...	...	8
Emphysema, Asthma	...	...	...	...	...	...	...	3	3	2	2	..	...	10
Bronchitis	99	46	145	4	4	6	13	20	26	29	48	33	2	330
Pneumonia	54	53	107	8	10	10	17	12	7	8	31	6	...	216
Pleurisy	...	...	..	...	...	1	1	...	3	...	...	...	...	5
Other Diseases of Respiratory System	...	...	...	...	...	...	...	...	1	2	2	...	...	5

Continued.

WARDS.												
St. Mary's	St. Peter's	Werneth	Westwood	St. Paul's	Coldhurst	Hartford	Hollinwood	Clarksfield	Munps	St. James'	Waterhead	Public Institutions. R'sid'nts
8	4	6	6	6	7	9	6	11	5	4	8	3
1	...	...	...	1	...	...	...	2	1	...	1	...
...	...	...	...	...	...	...	...	...	...	...	...	...
2	2	2	8	7	3	5	4	5	5	1	8	...
8	2	...	2	2	2	5	2	2	3	2	2	...
13	8	11	11	14	15	9	8	11	13	11	13	21
2	...	..	2	...	...	1	1	...	...	...	...	5
...	1	1	...	..	2	1	...	...	...	...	2	6
6	4	2	7	4	2	4	2	2	3	2	7	1
...	...	...	...	1	...	1	1	...	...	1	1	...
3	5	1	5	2	...	1	...	1	1	2	3	9
3	1	2	...	2	3	1	1	3	2	1	2	13
...	...	...	...	...	...	...	...	3	...	2	1	1
...	...	...	2	...	1	...	...	...	...	...	...	...
...	1	1	...	...	...	1	1	1	...	..	1	...
2	2	8	5	2	8	1	4	8	3	7	10	2
10	9	11	13	19	13	14	14	15	11	9	17	39
...	...	...	...	1	...	2	...	...	...	...	...	...
1	...	...	...	...	1	...	...	1	...	...	...	..
1	2	2	...	2	3	1	2	2	5	2	3	17
2	...	...	2	...	2	...	1	...	...	1	...	...
3	...	...	...	1	...	3	...	...	1	...	...	...
...	...	...	1	1	4	...	1	2	1	...	...	7
30	14	28	44	30	27	28	20	26	37	24	22	15
23	15	15	11	17	20	25	14	15	17	24	20	21
1	1	1	...	...	...	1	...	...	...	...	1	...
...	2	...	...	...	...	...	...	1	...	2	...	1

TABLE No. 15—

Cause of Death.	AGES.												Totals.
	0 to 1	1 to 5	Total under 5 years	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and upwards	
5. *Diseases of Digestive System.*														
Dentition ...	12	6	18	...	...	...	...	...	...	...	...	...	...	18
Sore Throat, Quinsy	2	1	3	...	1	...	...	..	...	...	...	..	...	4
Diseases of Stomach	10	5	15	...	1	4	...	..	3	1	...	.	...	24
Enteritis	8	7	15	...	...	2	...	...	...	...	...	...	...	17
Obstructive Diseases of Intestines	2	...	2	5	2	2	4	...	1	2	3	..	1	22
Hernia	1	1	2	...	...	...	1	1	3	1	1	...	...	9
Peritonitis	...	...	...	...	1	...	...	...	1	1	1	1	...	5
Ascites	...	...	...	...	...	..	..	...	...	...		...	...	..
Cirrhosis of Liver	...	...	...	...	...	.	3	4	5	...	1	2	...	15
Jaundice and other Diseases of Liver ...	2		2	...	...	...		3	1	1	5	2	...	14
Other Diseases of Digestive System	8	...	8	..	2	...	.	...	...	1	1	1	...	13
6. *Diseases of Lymphatic System.*														
Of Lymphatics and of Spleen	...	...	...	...	...	1	..	...	...	...	...	...	...	1
7. *Diseases of Glandlike Organs of Uncertain Use.*														
Bronchocele, Addison's Disease	...	..	..	...	...	...	...	3	...	...	...	...	...	3
8. *Diseases of Urinary System.*														
Nephritis	...	...	..	1	2	1	1	3	5	...	2	...	...	15
Bright's Disease, Albuminuria.	...	...	...	2	2	2	6	9	7	13	5	...	...	46
Disease of Bladder or of Prostate	1	...	1	2	...	1	1	1	...	2	1	3	...	12
Other Diseases of the Urinary System	1	...	1	...	...	3	...	4	1	1	...	1	...	11
9. *Diseases of Reproductive System.*														
A. *Of Organs of Generation.*														
Male Organs ...	...	...	...	...	...	...	...	..	...	...	...	...	...	...
Female Organs	...	...	...	...	...	...	...	...	..	...	...	...	...	...
B. *Of Parturition.*														
Abortion, Miscarriage	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Puerperal Convulsions	...	..	...	...	1	2	...	...	...	...	...	...	...	3
Placenta prævia, Flooding	...	...	...	...		...	...	...	...	...	...	...	...	...
Other Accidents of Childbirth.	...	...	...	...	1	4	..	..	...	...	...	...	...	5
10. *Diseases of Bones and Joints.*														
Caries, Necrosis	...	...	...	1	[illegible]	...	...	1	1	..	...	...	...	5
Arthritis, Ostitis, Periostitis...	..	...	...	..	...	...	...	...	...	...	...	...	...	...
Other Diseases of Bones and Joints	1	...	1	1	...	1	...	1	...	...	...	...	...	4

Continued.

WARDS												
St. Mary's	St. Peter's	Werneth	Westwood	St. Paul's	Coldhurst	Hartford	Hollinwood	Clarksfield	Mumps	St. James'	Waterhead	Public Institutions R'sid'nts)
4	...	1	1	...	...	...	4	1	2	2	3	...
...	...	2	...	...	...	...	1	1	...	...	...	...
...	1	1	1	2	..	3	4	1	2	5	4	...
...	3	...	...	2	...	3	2	3	...	2	2	1
2	1	2	2	3	...	1	3	3	...	2	3	5
...	3	1	2	...	...	...	...	...	1	1	1	3
1	..	..	1	1	...	...	1	1	..	...	...	...
...	...	...	...	...	...	...	..	...	...	...	...	...
...	4	...	...	1	3	3	3	1	...	...	...	...
...	3	2	1	...	2	2	1	1	1	...	1	6
1	1	...	4	1	...	1	...	1	...	3	1	...
...	...	...	...	...	1	...	...	...	...	...	...	1
...	...	...	..	..	...	...	1	...	...	...	2	1
...	...	...	...	2	1	2	2	4	1	2	1	2
1	7	3	4	4	6	5	1	7	3	1	4	1
2	1	...	1	2	2	1	3	...	...	...	...	5
1	...	3	2	...	...	...	...	...	2	1	2	...
...	...	...	...	...	...	...	...	...	...	...	...	...
...	..	...	...	...	...	...	..	...	...	...	...	..
...	...	...	...	...	...	1	...	..	...	...	...	...
...	...	...	...	1	2	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	..	...	...	...	...
...	1	...	...	...	1	...	...	1	2	...	..	...
1	...	...	...	1	1	...	...	1	...	...	1	...
...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	.	...	1	...	...	1	...	1

TABLE No. 15—

Cause of Death.	AGES.													Totals.
	0 to 1	1 to 5	Total under 5 years.	5 to 15	15 to 25	25 to 35	35 to 45	45 to 55	55 to 60	60 to 65	65 to 75	75 to 85	85 and upwards	
11. *Diseases of Integumentary System.*														
Carbuncle, Phlegmon	...	...	...	...	...	...	...	2	..	...	...	...	...	2
Other Diseases of Integumentary System	...	...	...	...	...	...	...	...	...	...	...	...	...	...
VII.—Deaths from Violence.														
1. *Accident or Negligence.*														
Fractures and Contusions	1	...	1	4	3	2	3	6	1	1	3	2	...	26
Gunshot Wounds	...	...	..	...	...	..	...	...	...	...	...	...	..	...
Cut, Stab	...	...	...	...	..	..	...	...	...	...	...	...	..	...
Burn, Seald	1	8	9	1	...	1	...	...	2	...	...	...	...	13
Poison	...	...	...	..	1	...	...	...	...	..	...	...	...	1
Drowning	1	...	1	3	...	...	...	...	...	...	...	...	...	4
Suffocation	1	...	1	...	...	...	...	...	...	...	...	..	...	1
Otherwise	...	...	...	...	...	...	...	...	...	2	...	...	...	2
2. *Homicide.*														
Manslaughter	...	...	...	...	...	...	...	...	...	..	...	...	...	...
Murder	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3. *Suicide.*														
Gunshot Wounds	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Cut, Stab	...	...	...	...	...	3	2	1	...	...	...	...	...	6
Poison	...	...	...	...	...	1	...	1	...	...	...	...	...	2
Drowning	...	...	...	...	...	2	1	...	...	1	1	...	...	5
Hanging	...	...	...	...	...	...	2	...	...	1	1	...	..	4
Otherwise	...	...	...	...	...	...	...	1	..	...	...	...	...	1
VIII.—Deaths from Ill-Defined and not Specified Causes.														
Dropsy	...	...	..	...	...	...	...	...	...	...	...	...	...	...
Debility, Atrophy, Inanition	70	3	73	...	...	1	...	...	...	...	...	...	...	74
Mortification	...	...	..	...	...	...	...	...	..	...	4	3	..	7
Tumour	...	...	...	...	...	2	4	5	...	1	...	...	...	12
Abscess	2	1	3	...	1	...	1	...	1	...	...	...	...	6
Hœmorrhage	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sudden Death (cause not ascertained)	19	4	23	4	..	2	6	9	3	3	9	3	...	62
Causes not Specified or Ill-defined	6	3	9	...	...	...	...	1	...	1	...	...	...	11

Continued.

WARDS.												
St. Mary's	St. Peter's	Werneth	Westwood	St. Paul's	Coldhurst	Hartford	Hollinwood	Clarksfield	Mumps	St. James'	Waterhead	Public Institutions. (Resid'nts)
...	...	...	1	...	...	...	...	1	...	...	...	1
...	...	...	...	...	...	...	...	...	...	..	...	...
4	5	...	2	2	1	6	1	1	1	1	2	13
...	...	...	...	...	...	...	...	...	..	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	..
1	2	...	4	1	...	1	1	1	1	1	...	10
1	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	2	...	...	1	1	...	...	...	...
...	...	...	...	...	...	...	...	1	...	...	...	...
...	...	...	...	2	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...
..	...	...	...	...	...	...	...	...	...	...	...	...
...	1	...	...	...	...	...	...	...	...	...	...	...
1	1	...	2	...	...	...	1	1	...	...	...	2
...	...	1	...	...	...	...	...	1	...	...	...	...
...	...	...	1	1	2	...	...	...	...	1	...	...
1	...	...	...	...	...	1	...	1	...	1	...	...
...	...	...	...	...	1	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...
6	2	6	12	10	4	12	3	9	3	2	5	1
2	...	...	...	...	...	1	...	1	...	1	2	1
2	1	2	2	1	...	2	...	1	...	...	1	8
...	...	...	2	1	...	3	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	...
4	5	4	6	5	6	6	1	8	9	6	2	2
...	2	...	3	1	1	...	...	...	2	1	1	3

PART II.

INFECTIOUS DISEASES.

During the year 1903 there were 122 fewer cases of Infectious Diseases reported than in the previous year. There was a decrease in the number of Scarlet Fever, Typhoid and Puerperal Fever Cases, but an increase in the number of cases of Smallpox and Diphtheria. The total number notified was 1,025, consisting of Smallpox 256; Scarlet Fever 507; Diphtheria 201; Typhoid Fever 52; and Puerperal Fever 9 cases. All except three of the cases of Smallpox occurred during the first seven months of the year, the largest number being in the third week in April, at the time of the epidemic in the Workhouse.

Scarlet Fever was most prevalent during the first quarter of the year, while Diphtheria was fairly evenly distributed throughout the year.

The following is the total number of deaths which have occurred during the year from the various Zymotic Diseases: Smallpox 23, Measles 43, Scarlet Fever 30, Diphtheria 54, Whooping Cough 111, Typhoid Fever 12, Diarrhœa 47, Erysipelas 7, and Puerperal Fever 4.

The Death-rate for the Borough from the seven principal Zymotic Diseases during the year is 2·34, and compared with the eight Lancashire towns stands third; the rates being as follows:—Bolton 1·2, Blackburn 1·5, Oldham 2·3, Liverpool 2·5, Manchester 2·5, Burnley 2·8, Salford 2·8, Preston 3·1. The average Zymotic Rate of the 33 large towns is 1·83, and Oldham stands 24th in the list.

SCARLET FEVER.

During the year 507 cases of Scarlet Fever were reported. This is 197 fewer than in the previous year, and out of these cases 34 ended fatally.

The disease was most prevalent in the town during the months of February, March and April.

None of the various Wards in the town exhibited any great prevalence of the disease.

Statistics have been recently published which tend to prove that where a large proportion of Scarlet cases are removed to Hospital for isolation the attack rate is higher than when a smaller proportion are removed. In this town, as far as a comparison of Wards of a similar nature indicates, the opposite is the case, for in those Wards from which above 50 per cent. of the cases have been removed to hospital the attack rate is mostly below the average, while in those Wards in which less than 50 per cent. have gone to hospital the attack rate is, with one exception, above the average for the town.

Every possible care has been taken at the Hospital to prevent any patient being discharged while in an infectious condition, and the return cases during the year have been very few.

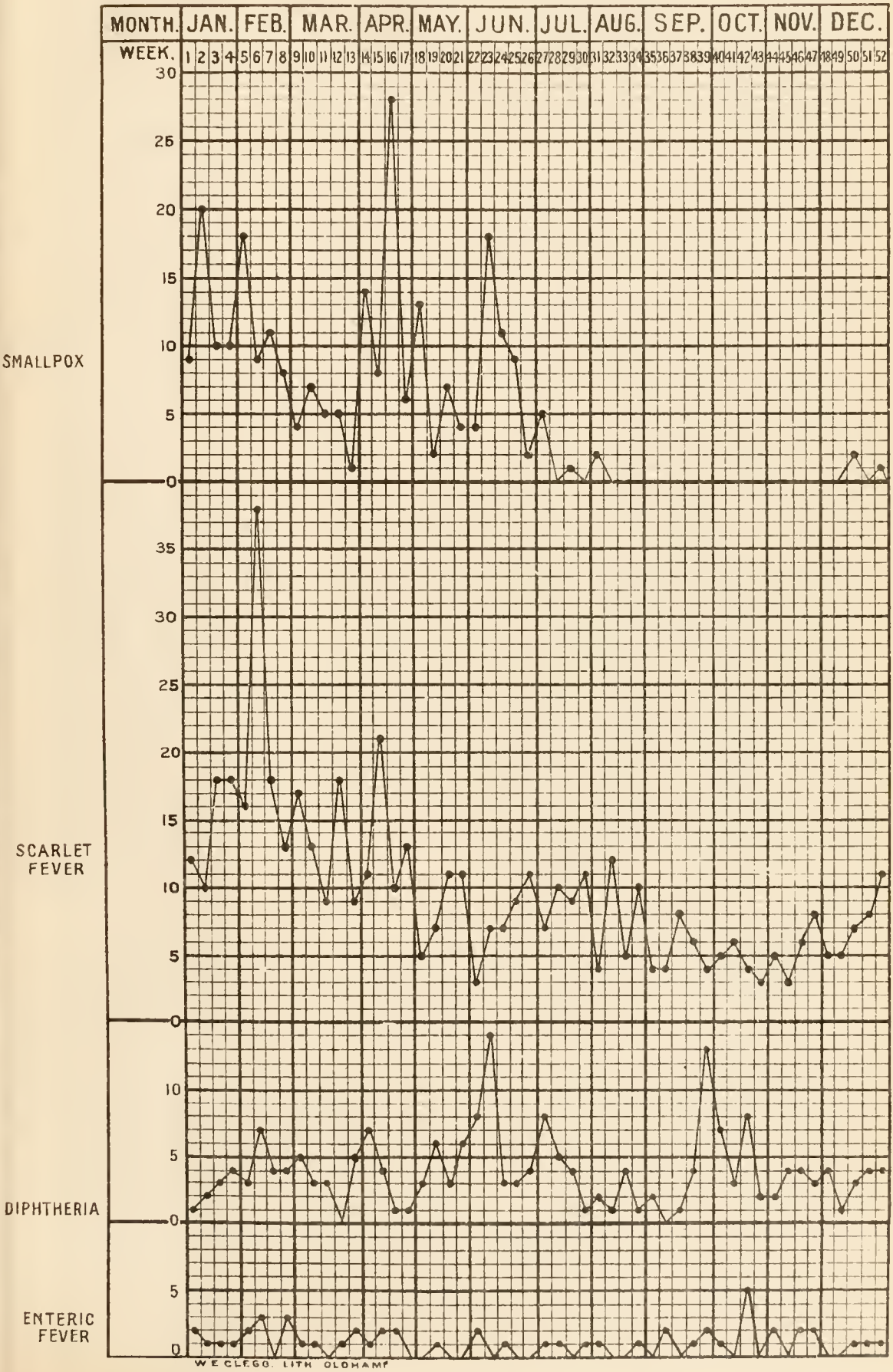
Out of the 507 cases in the Borough 236, or 46 per cent., were removed to Westhulme Hospital, and in addition 14 cases from the out-districts were also admitted.

The percentage of deaths in all the cases reported in the Borough during the year was 6·7, and among those treated in the Hospital 5·2 per cent.

BOROUGH OF OLDHAM.

CASES OF INFECTIOUS DISEASE

Notified during the year 1903.



SMALLPOX.

This disease, which was so prevalent throughout the country in 1902, continued in Oldham until the beginning of August, and three additional cases occurred just at the close of the year.

The epidemic in the earlier part of the year was a continuation of that which commenced in August, 1902, when it was introduced into a large lodging-house in the town by a tramp from Bolton. The disease had almost been cleared out of the town by the middle of March, when it was again introduced by a man travelling through the town, who stayed at the Workhouse two or three nights, and the evening after his leaving there, was discovered in a Manchester tramp ward suffering from the disease. A fortnight after his leaving the Workhouse, nine cases were reported in that institution, and two others outside for which no other origin could be found except that they were in a house on the direct route by which the man passed on his way to Manchester. After a further incubation period of about a fortnight, 26 additional cases occurred, and in all over 60 cases in the institution were due, directly or indirectly, to the above man, and of these cases nine ended fatally.

I am informed that a probationer nurse who was removed with smallpox was the only nurse in the building who had not been re-vaccinated.

At the end of May, a young woman in Webster Street died suddenly after two days' illness. There was no history of contact with Smallpox, and no rash to indicate this disease, but a fortnight later five other members of this family were taken ill with Smallpox—four with the con-

fluent form and one with severe discrete, rendering it certain that the first case was one of undeveloped Smallpox, and later on it was ascertained that she had been in contact with an unrecognised case. Eight persons contracted the disease from this unrecognised case.

Fifteen persons also directly contracted the disease from another unrecognised case in Lee Street.

The three cases at the close of the year were introduced by contact with a family suffering from the disease in Chadderton.

Generally speaking, the disease has been of an exceedingly mild type, and but for the proportion of old and debilitated men from the Workhouse, there would have been very few deaths.

There were 278 cases of Smallpox admitted to Strinesdale Hospital, and the new hospital was completed just in time to enable all the cases to be isolated. The cases were from the following districts :—Oldham 256, Failsworth 6, Crompton 5, Royton 2, Chadderton 1, Lees 4, and Saddleworth 4.

All the cases discovered were removed to Hospital except two—one the girl who died before the disease could be diagnosed, and the other a man who had recovered from a mild attack before he was examined.

The distribution throughout the town was as follows :

In Lodging-houses 37	1	house contributing...	23
	1	,, ,, ...	6
	1	,, ,, ...	4
	1	,, ,, ...	4
In the Workhouse			71
In Private houses			149

Out of the 279 cases, 23 (ten of whom were from the Workhouse) died, and the particulars of these are given on a later page.

The following table gives the condition as to vaccination and the percentage of deaths ; a record of which is required to be kept under the Vaccination Act :—

TOTAL CASES AND DEATHS IN VARIOUS AGE PERIODS IN 1903.

	Ages.	Under 5 years	5 and under 10	10 and under 15	15 and under 20	20 and under 40	40 and upwds	Total
Vaccinated in Infancy.	Cases	0	0	1	6	95	102	204
	Deaths	0	0	0	0	1	16	17
	Percentage	...	...	...	...	1 %	15·6%	8·3%
Not vaccinated.	Cases	7	23	20	12	9	4	75
	Deaths	2	2	0	1	0	1	6
	Percentage	28·5%	8·9%	...	8·3%	...	25 %	8·0%

In visiting the various houses in the town, a record of the cleanliness of the houses has been kept, and also a record of the condition as to vaccination of all the contacts living in the private houses invaded by the disease. Of 94 houses, in which primary cases occurred, 29 were clean and free from any insanitary conditions ; 38 were moderately clean but free from insanitary conditions, and 27 were dirty or insanitary. If uncleanness is considered to be the cause of the disease, the number of cases which occurred in the Workhouse would reflect considerably on its management.

In the houses I visited, there were 435 persons living, who are thus deemed to be contacts, and the following figures indicate their vaccinal condition and the attack rates :—

Contacts.	Number	Contracted Smallpox	Percentage.
Not vaccinated before 1st case in the house	167	28	17%
Vaccinated ,, ,, ,, ,,	257	13	5%
Re-vaccinated ,, ,, ,, ,,	7	0	...
Previously had Smallpox	4	0	...
Contacts not Vaccinated before 1st Case in House.			
Never Vaccinated	28	20	71%
Vaccinated after being in Contact	139	8	6%
	167	28	17%
Contacts Vaccinated previous to 1st Case.			
Vaccinated in infancy only	93	11	11·8%
Re-vaccinated after being in Contact	164	2	1·2%
	257	13	5%
Total Contacts.			
Never Vaccinated	28	20	71%
Vaccinated before or after Contact	403	21	5·2%
Had Smallpox	4	0	...

The following of the 33 large towns in England have a death-rate from Smallpox of ·1 per 1000 and upwards during the year 1903 :—

Burnley	·1	per 1000 population.
Leicester.....	·1	,, ,,
Gateshead	·16	,, ,,
Oldham	·17	,, ,,
Liverpool	·19	,, ,,

The epidemic both during this year and in the previous year has thrown an enormous amount of extra work on the Staff of the Health Department, who have, however, cheerfully undertaken it, with the extra assistance only of one man as driver and assistant disinfector; and it is probable that seldom has so large an epidemic been dealt with at so little extra cost to the public funds, and probably with as little public appreciation.

As the epidemics of 1902 and 1903 are really one, I have summarised the following particulars of the cases dealt with in the borough It will be seen from these tables that there was not a single case in a vaccinated person under the age of 10, or a death in a vaccinated person under the age of 25, and only one under the age of 40 :—

	1902.	1903.	Total.
Oldham Cases	177	257	434
Failsworth	6	6	12
Alt.....	1	—	1
Chadderton	—	1	1
Crompton	—	5	5
Royton	—	2	2
Lees	—	4	4
Saddleworth.....	—	4	4
Total	184	279	463

	No.	Died.	Per-centage
Cases Vaccinated before the disease was contracted	323	21	6·5
Cases not Vaccinated before the disease was contracted	139	11	7·9
Doubtful	1	0	...
Total	463	32	6·9

Four patients were also said to have been re-vaccinated: one 25 years previously, and showing 4 vaccination scars; one 35 years previously, but with no marks; and two others, both of whom stated that the re-vaccination had not been successful, and one showing 3 marks and the other one mark.

The following shows the condition of those admitted to Hospital as regards Vaccination :—

	Not Vaccinated	Vaccinated with					
		no marks.	1 mark.	2 marks.	3 marks.	4 marks.	over 4 marks.
1902.. ...	64	5	12	53	29	19	1
1903.....	75	11	42	89	32	29	1
Total...	139	16	54	142	61	48	2

The following table gives particulars of the fatal cases in the years 1902-1903 :—

NOT VACCINATED PREVIOUS TO CONTRACTION OF DISEASE.

No.	Age. Years.	Vaccination marks.	Severity of Disease.	Days in Hospital.
1	5	...	Semi-confluent...	29
2	34	...	Severe discrete...	14
3	11	...	Semi-confluent..	7
4	2	..	Confluent	10
5	35	..	Semi-confluent...	8
6	14days	...	Semi-confluent...	5
7	43	...	Severe discrete. .	13
8	18	...	Hæmorrhagic ...	Not removed†
9	9	...	Confluent	10
10	4 mths	...	Severe discrete...	4
11	9	...	Severe discrete..	8

† Died on 3rd day of illness.

VACCINATED IN INFANCY.

No.	Age. Years.	Vaccination marks.	Severity of Disease.	Days in Hospital.
12	51	1 mark.....	Moderate discrete	56*
13	43	1 small mark...	Severe discrete...	8
14	44	3 marks	do. ..	11**
15	45	2 marks	Semi-confluent...	7
16	40	1 mark.....	Severe discrete .	7
17	49	1 mark.....	Semi-confluent...	5
18	48	1 mark....	do. ...	12
19	69	2 marks	Severe discrete .	14
20	69	1 mark	do. ..	6
21	70	1 mark	Semi-confluent...	6
22	65	1 mark...	Severe discrete .	2††
23	62	2 marks	Semi-conffuent...	7
24	44	1 mark	Severe discrete...	6
25	53	2 marks	Semi-confluent...	6
26	46	2 marks	Severe discrete...	19
27	76	1 mark.....	do. ...	16
28	73	2 marks	do. ..	7
29	45	2 marks	Acute mania.....	4‡
30	40	None	Semi-confluent ..	6‡‡
31	25	3 marks	Severe discrete ..	3‖
32	48	2 marks	Hæmorrhagic ...	8

* Died of Paralysis.
** Died of Apoplexy 2nd attack. Paralysed when admitted.
†† Pneumonia also when admitted.
‡ Doubtful case.
‡‡ Prematurely confined in Hospital.
‖ Confined the day before the rash appeared.

TOTAL CASES AND DEATHS AT VARIOUS AGE PERIODS DURING WHOLE EPIDEMIC, 1902-3.

Ages.		Under 5 years	5 and under 10	10 and under 15	15 and under 20	20 and under 40	40 and upwds	Total.
Vaccinated in infancy	Cases	0	0	2	8	167	146	323
	Deaths	0	0	0	0	1	20	21
	Percentage . ..	0	0	0	0	·6	13·7	6·5
Not vaccinated before the disease was contracted.	Cases	17	46	38	17	17	5	140
	Deaths	3	3	1	1	2	1	11
	Percentage	17·6	6·5	2·7	5·9	11·7	20	7·9

DIPHTHERIA.

This disease again has shown a tendency to increase in the town, 201 cases being reported during the year, against 187, and 54 deaths occurring, against 48 deaths in the previous year.

The disease has been distributed fairly evenly throughout the year, except in August and the early part of September, when there were very few cases. As this period corresponds with the school holidays, it is a very strong indication that school life has some influence in its prevalence. The disease was most prevalent in Werneth, St. Paul's and Waterhead Wards, and least so in Hollinwood, St. Mary's, Hartford and Clarksfield Wards. This distribution does not indicate its association with insanitary conditions, but almost the reverse; nor with the density of the population, for, as was the case in the previous year, the Wards with the highest density have the fewest cases.

As is usual, the disease was exceedingly fatal in young children, for out of seven cases under the age of one year five died, and of 76 under the age of five 36, or nearly one half, died; and 66 per cent. of the fatal cases were in children under the age of five years.

One group of cases in the Werneth district, were probably due to a contaminated milk supply. The farm from which the milk came was outside the town, but I was informed by the Medical Officer for the district that he was unable to find any insanitary conditions there.

Another batch of cases occurred among the scholars at Waterhead Board School, into which school the disease was undoubtedly introduced by children from an adjoining district. All the first lot of cases occurred among children from this out-district, and secondarily only among the Oldham children.

ENTERIC OR TYPHOID FEVER.

With the exception of the year 1901, there were fewer cases of this disease during the year than for the last 20 years, 52 cases only being notified. Of these 12 attacks, or 23%, proved fatal.

The largest number of cases occurred in St. Paul's and Clarksfield Wards. These Wards usually have a greater proportion of cases, but in spite of the most careful observation and enquiry, no adequate reason can be ascertained for this. They are certainly not the Wards with the most insanitary property. There were two or more cases in each Ward, except St. Mary's, which was entirely free, as far as is known, from this disease.

Eighteen cases were removed to Westhulme Hospital for treatment, and 14 persons suffering from the disease were received into hospital from the out-townships.

The death percentage of all the cases in the town was 23 per cent.; of the Oldham cases treated at home, 21 per cent.; of all the cases treated at Westhulme, 24 per cent.

It is unfortunately a common practice, especially with the out-townships, to keep the patients at home until they become unmanageable, or so seriously ill as to require special nursing, and then remove them to Hospital. The removal, however carefully carried out, is much more serious for the patient when the disease is at its height than in the early stages. Some of the patients arrived at the Hospital practically moribund.

One of the Nurses at the Hospital contracted the disease from a patient, but I am glad to say recovered.

A specimen of blood for Widdal's test is taken in all the Oldham cases before removal to Hospital.

The death-rate from Enteric Fever for the year was ·09 per 1000 of the population; for the 76 large towns of England, ·12 per 1000.

Compared with the other large Lancashire towns, Oldham has the lowest death-rate from this disease.

As regards the origin of the disease, 10 cases had various insanitary conditions associated. Six had their milk from a farm which was in a very filthy condition. Two patients had partaken of some shellfish shortly before their illness, and complained that "they tasted bad." One person probably contracted the disease in embalming the body of a

person who had died from Enteric Fever. Two others almost certainly contracted the disease when away for a holiday during the Oldham Wakes, and no cause could be ascertained in respect to the remaining cases.

PUERPERAL FEVER.

Only nine cases of this disease were notified during the year, and four of these ended fatally. There were two cases in St. Peter's Ward, both of which proved fatal; two in Hartford (one fatal); one in Hollinwood; three in Clarksfield, and a fatal case in Waterhead Ward.

ERYSIPELAS.

Seventy-four, or exactly the same number of cases as in the previous year, were notified, and seven of these terminated fatally.

Two of the fatal cases were in infants under the age of one year, one in a girl aged 14, and the other four were in adults.

The two infants were both unvaccinated.

Many of the cases were exceedingly trivial, occurring in connection with some slight wound or abrasion, and were hardly worthy the name of erysipelas.

MEASLES.

The question has often arisen as to which diseases should be termed the "dangerous infectious diseases," for almost every year the two diseases which the public too often consider very trivial and of no moment, head the list with the largest number of deaths from Zymotic Disease.

This year Measles was the cause of 43 deaths, and this by no means covers the injury caused by it. The lung weakness often left by this disease, especially in those families where there is little care in the protection of the children, too frequently is the foundation for Bronchitis, Pneumonia, Tuberculosis, &c.

Many of the school teachers now regularly report cases of Measles occurring among their scholars; and as the majority of these are visited by the lady inspectors, it is expected that their instructions will gradually dispel a considerable amount of ignorance respecting this complaint.

When she visits the house, the inspector, having given instructions as to isolation, leaves a certificate stating when the patient and the other children of the household may return to school. The isolation period is, for the patient one month from the date of attack, and for the contacts 14 days, unless they are under the age of five years, when they are also excluded for the same time as the patient.

Strictly, all the children in a house where Measles exists should be kept from school, unless there is satisfactory isolation; but to avoid excessive loss of school attendance, and also having in view the little danger of spreading the disease among the older children, I have allowed the elder children to attend school after 14 days, provided of course they do not contract the disease.

The Certificate left at the house by the Inspector prevents also the frequent visits of the School Attendance Officer. During the year 398 patients were reported as suffering from Measles, and were visited by one of the lady Inspectors.

CHICKEN POX.

This disease was notifiable until the end of the year. No deaths were attributable to this cause. Some mild cases of Smallpox were discovered which it is probable would not have come to light had this disease not been notifiable; 293 cases of Chicken Pox were reported, either from the Schools or by Medical Men.

WHOOPING COUGH.

This disease, like Measles, is generally considered a trivial complaint, or at least mothers very frequently act as if they considered it to be of this nature. Yet during the year 111 deaths were directly due to this cause, and probably a considerable number of other deaths were indirectly the result of this disease. Without apparently the slightest thought for the safety of other children, those suffering from this disease are taken into other houses, tramcars, and even to places of entertainment. I myself, in the early part of the year, turned out of a crowded room, in which there were numbers of other children, a woman who had brought with her a child suffering most unmistakably from Whooping Cough in a most infectious stage. All except five of the deaths were in children under the age of five years, and 46 were of infants under the age of one.

The death-rate in Oldham from this disease was ·78 per 1000 population, which is just about one third the total zymotic rate for the Borough.

Seventy-four cases only were reported from the Schools.

CANCER.

Ninety-one deaths were caused by Cancer during the

year, compared with 98 during the previous year. This disease throughout the country seems to be claiming a larger number of victims every year, and so far our knowledge of its cause does not allow us to use any special measures for checking its spread. What knowledge we have seems to more and more indicate that it is of an infectious nature. All the deaths were in persons over the age of 25, and the largest number in persons between the ages of 45 and 55.

The Liverpool Cancer Research Committee have recently called attention to the fact that medical advice and treatment is most frequently not obtained until the disease is well advanced. The most frequent organs to be attacked are, in men the gullet, stomach and intestines, and in women the breast and the womb; and it is most important that the disease should be recognised in its earliest stages, and this can only be done by the patient seeking medical advice at the very beginning of the illness.

MEASURES ADOPTED TO PREVENT THE SPREAD OF INFECTIOUS DISEASE.

There are two Infectious Diseases Hospitals in the Borough, Westhulme for General Infectious Diseases, and Strinesdale for Smallpox.

Westhulme Hospital.—During the year 236 cases of Scarlet Fever, 18 cases of Typhoid, 6 cases of Diphtheria, and 18 cases of Measles were removed from the Borough to this Hospital for isolation and treatment; and in addition 14 cases of Scarlet Fever and 14 of Typhoid have been received from the surrounding Townships. The benefits of the Hospital are becoming more and more appreciated, and

in several cases application for the admission of children was made, where they could be just as well isolated at home.

No complaints were received either in regard to the care or treatment of the patients.

The nominal accommodation at the Hospital is—

Scarlet Fever block (4 wards), 40 beds.
Typhoid block (4 wards), 48 beds,
Isolation block (4 wards), 10 beds.

Strinesdale Hospital.—256 cases have been removed to this Hospital from the Borough during the year, and 22 cases were also received into the Hospital from Failsworth, Crompton, Royton, Lees, and Saddleworth. The old Hospital formerly consisted of two wards, each containing nominally 20 beds, but one ward has now a small ward partitioned off which contains six beds Even when no patients are in the Hospital, this small ward is always ready, and two or three beds made up and kept warm ready for immediate occupation.

Towards the end of the year 1902, the Epidemic of Smallpox showing signs of increasing, it was deemed advisable to extend the accommodation. This was done by transferring to Strinesdale an iron building which had been used in the town as a temporary school, and which was no longer required for that purpose.

This building consists of five rooms, three of which will contain six beds each, one eight beds, and one will serve for the accommodation of the nurses. The accommodation at the Hospital has thus been increased by 26 beds, together with baths, lavatories, &c. The two Hospital Blocks are connected by an iron corridor with a fireproof door in the centre. It is intended at the first opportunity to erect also a cooking-kitchen. The new building was hardly completed when it became necessary to occupy one of the wards.

Disinfection.—During the year 906 houses (or 2,295 rooms) have been disinfected, and 104 entirely stripped and cleaned.

Disinfection of the rooms after infectious disease is generally carried out by burning sulphur. This is probably not quite as effective as some other methods, but it has the advantage of compelling the householders to thoroughly clean and ventilate the rooms before they can be used again.

After Smallpox the walls, &c, of the rooms are all sprayed with a solution of formalin before fumigation.

Bedding, clothing, &c., are removed and disinfected by steam at the Central Depot, and over 10,000 articles have been either disinfected or destroyed during the year.

Disinfectants in the form of Izal, Sanitas, Carbolic Powder, and Soap are distributed to those houses where infectious disease exists, and Carbolic Powder where insanitary conditions are reported.

The excreta of Typhoid patients, where no water-closet exists, are received into special receptacles and burnt.

The drains of houses in which Typhoid, Diphtheria, or Puerperal Fever may occur are tested where possible by the smoke machine, and any defects found are remedied.

Schools.—During the year I have visited several of the schools, and examined the children in certain classes, with a view to discovering unsuspected cases of infectious disease, where this course was deemed advisable. I am of opinion that if this could be carried out systematically a considerable number of cases of infectious disease could be prevented. Indeed, I believe it will be absolutely necessary to adopt this procedure in the near future, if the extension of

Diphtheria is to be checked; but with the attention to the patients at the Hospital, and other work, it is impossible for one person to carry it out.

During the year the Head Teachers of many of the schools reported regularly, week by week, suspected cases of Measles, Whooping Cough, Chicken Pox, &c., and these were subsequently visited by the Female Inspectors. I am convinced that the spread of these minor ailments, especially the two former, is much restrained by these means, and if regularly carried out will often obviate the closure of the school. Several cases reported to be Measles have turned out to be Scarlet Fever, and if not reported would probably have escaped notice until by their early return they had caused several other cases.

A supply of Antitoxin has been kept for urgent or night cases of Diphtheria, but as it can now be obtained from a local firm of Chemists, it has not been regularly supplied during the daytime. A supply of Antetetanic Serum is also kept in stock.

In Smallpox every effort is made to ascertain who have been in contact with the various patients, and they are then kept under observation for at least 15 or 16 days after contact. They are all strongly advised to undergo the only effectual preventative, that of vaccination, and I am glad to say the majority have been wise enough to do so. All contacts must either send their clothing to be disinfected, and have a bath at home, or, if they have not a change of clothes, must go to the disinfecting station and have a bath while their clothing is disinfected.

I regret to say that the information given as to persons who have been in contact, or as to the visits of the patient, is in a few cases entirely false and untruthful.

TABLE No. 16.

SCARLET FEVER.

Ages	Cases Reported.	Deaths of such Cases.	
		Total.	Percentage.
Under 5 years	173	18	10·4
5 to 10	224	13	5·8
10 to 15...	80	3	3·7
15 to 25...	23	...	...
25 to 35...	5	...	...
35 to 45...	2	...	...
45 to 55...	...	...	...
Over 55	...	...	...
Total	507	34	6·7

TABLE No. 17.

DIPHTHERIA.

Ages.	Cases Reported.	Deaths of such Cases.	
		Total.	Percentage.
Under 5 years ...	76	36	47·3
5 to 10...	60	13	21·6
10 to 15...	32	3	9·3
15 to 25...	13	...	...
25 to 35...	9	1	11·1
35 to 45...	7	...	...
45 to 55...	4	1	25·0
Over 55...	...	...	...
Total	201	54	26·8

TABLE No. 18.

TYPHOID OR ENTERIC FEVER.

Ages.	Cases Reported.	Deaths of such Cases.	
		Total.	Percentage
Under 5 years ...	2	1	50·0
5 to 10...	6	1	16·6
10 to 15	5	...	...
15 to 25...	14	...	...
25 to 35...	14	3	21·4
35 to 45...	3	1	33·0
45 to 55...	6	4	66·6
Over 55...	2	2	100·0
Total	52	12	23·0

TABLE No. 19.

Showing the number of **Cases of Sickness** and the **Deaths Registered** during the several months of the year 1903 in Oldham.

Months.	Smallpox.		Scarlet Fever.		Diphtheria.		Typhoid Fever.		Puerperal Fever.		Typhus Fever		Erysipelas		Membranous Croup		Relapsing Fever		Continued Fever	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases	Deaths	Cases.	Deaths.	Cases.	Deaths	Cases.	Deaths.
January ...	49	3	61	2	13	4	5	1	...	...	...	...	7	1	...	...	...	...	...	...
February...	48	1	85	9	19	5	8	...	...	...	...	...	6	...	...	...	...	...	...	...
March	21	1	61	3	11	6	4	...	...	...	...	...	7	...	...	...	...	...	...	...
April	57	4	55	1	16	9	6	2	1	1	...	...	8	...	...	...	...	...	...	...
May	26	4	39	6	17	5	1	1	...	...	...	...	10	...	...	...	...	...	...	...
June	42	7	31	1	30	7	3	1	...	...	...	...	4	1	...	...	...	...	...	...
July	8	2	43	3	20	3	3	...	1	...	...	...	5	...	...	...	...	...	...	...
August ...	2	1	35	...	9	4	2	2	2	1	...	...	3	...	...	...	...	...	...	...
September.	...	..	21	3	16	3	4	1	3	2	...	...	5	1	...	...	...	...	...	...
October ..	...	...	20	1	23	8	8	1	2	...	...	...	6	2	...	...	...	...	...	...
November..	...	...	22	1	13	3	5	2	...	...	...	...	6	1	...	...	...	...	...	...
December..	3	...	34	...	14	1	3	1	...	...	..	...	7	1	...	...	...	...	...	...
Totals ...	256	23	507	30	201	58	52	12	9	4	...	...	74	7	...	...	...	...	..	...

TABLE No. 20.

Cases of Infectious Disease notified during the Year 1903.

Notifiable Disease.	Cases Notified in Whole District.						
	At all Ages.	At Ages—Years.					
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwds.
Small-pox	256	3	4	37	34	154	24
Cholera	...	...	...	...	...	..	...
Diphtheria	201	7	69	92	13	20	...
Membranous Croup	...	...	...	...	...	...	...
Erysipelas	74	1	2	3	13	47	8
Scarlet Fever ...	507	4	169	304	23	7	...
Typhus Fever ...	...	...	...	...	...	...	...
Enteric Fever ..	52	...	2	11	14	25	...
Relapsing Fever ..	...	...	...	...	...	...	...
Continued Fever ...	...	...	...	...	...	...	...
Puerperal Fever ...	9	...	...	...	2	7	...
Plague	...	...	...	...	...	..	...
Totals ...	1099	15	246	447	99	260	32

TABLE No. 20—Continued.

Cases of Infectious Disease notified during the Year, 1903.

Notifiable Disease.	Total Cases Notified in each Locality.											
	St. Mary's Ward	St. Peter's Ward	Werneth Ward	Westwood Ward	St. Paul's Ward	Coldhurst Ward	Hartford Ward	Hollinwood Ward	Clarksfield Ward	Mumps Ward	St. James's Ward	Waterhead Ward
Small-pox	10	9	19	85	20	19	10	13	8	40	9	14
Cholera	..	...	...	...	...	..	...		..	...	..	...
Diphtheria...	8	20	39	15	31	19	6	3	6	11	16	27
Membranous Croup .	...	...	...	..	...	...	...	...	...	..	...	...
Erysipelas...	3	5	5	9	3	4	6	3	10	6	9	11
Scarlet Fev'r	48	54	29	33	53	34	45	26	55	39	23	68
Typhus ,,	...	...		...	...	...	...	...	...	..	..	...
Enteric ,,	...	3	6	3	10	2	3	3	7	4	6	5
Relapsing ,,	...	...	...	..	..	...	..	...	...	...	...	...
Continu'd ,,	...	...	...	...	...	...	...	...	...	...	...	..
Puerperal ,,	...	2	...	..	...	...	2	1	3	...	...	1
Plague	...	...	...	...	...	...	...	...	...		...	...
Totals ...	69	93	98	145	117	78	72	49	89	100	63	126

TABLE No. 20—Continued.

Notifiable Disease.	No. of Cases Removed to Hospital from each Locality											
	St. Mary's Ward	St. Peter's Ward	Werneth Ward	Westwood Ward	St. Paul's Ward	Coldhurst Ward	Hartford Ward	Hollinwood Ward	Clarksfield Ward	Mumps Ward	St. James's Ward	Waterhead Ward
Small-pox ...	9	10	19	85	20	18	11	13	8	41	9	13
Cholera ...	...	.	...	...	.	...	...	.	...	...	...	..
Diphtheria...	...		3	...	1	...	...	...	...	1	...	1
Membranous Croup ...	...	...	...	...	...	...	...		.	...	...	...
Erysipelas...	..	...	...	...	...	...	...	...	...	...	...	...
Scarlet Fev'r	26	17	18	12	16	20	25	17	23	27	12	23
Typhus ,,	...	...	...	...	...	...	...	...	...	...	...	...
Enteric ,,	...	1	2	2	5	1	1	...	3	3	...	...
Relapsing ,,	...	...		...	...	...	...	...	...	...	..	...
Continu'd ,,	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal ,,	...	...	...	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...	..	...
Totals ...	35	28	42	99	42	39	37	30	34	72	21	37

TABLE

Summary of Cases Admitted into Westhulme

	1880		1881		1882		1883		1884		1885		1886		1887		1888		1889		1890	
	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died
Smallpox ...	5		39	9	18	2	6	.	2	...	5	. .	5	...	3	...	123	16	1	...	...	...
Measles	2		...	...	2	...	1	...	5					.	1	1	.	...	...	.	3	...
Scarlet Fever	73	12	60	15	30	2	91	3	111	10	90	8	205	10	571	27	203	8	222	13	134	7
Diphtheria	...	...	2	1	...	...	..	.	...			..	...	..	..	..	...	.	...		...	...
Typhus	.		1	1			...		1	.	...	...	12	4	2	1	..	.		...	1	..
Typhoid Fever.	28	5	56	8	29	4	32	7	36	4	31	7	52	8	40	6	23	7	12	5	28	5
Simple Continued Fever	2	..	4	1	2	...		.		.	1		1	...			...		...	...	...	...
Puerperal Fever.	...	..	...		...	..	...	...	...	...	...		...		1	1	..	.		.	...	...
Erysipelas ..	...	...	...	...	...	...	5	1	4	2	1	...	2	1	1	...	1	.	...	...	.	...
Ill-defined ...	...		...	...		...	...	...	6	...	4	3	...	...	...	...	4	...	1		...	...
	110	17	162	35	81	8	135	11	165	16	132	18	277	23	619	36	354	31	236	18	166	12

No. 21.

Hospital During the Years 1880 to 1903.

1891		1892		1893		1894		1895		1896		1897		1898		1899		1900		1901		1902		1903	
Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died	Admitted	Died
...	...	136	16	638	63	28	1	8	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...
...	..	1	...	...	...	...	...	18	5	12	3	43	3	22	6	9	...	2	...	50	6	26	6	18	2
81	4	246	15	...	...	20	2	67	5	371	18	140	8	164	14	400	23	585	30	425	27	405	23	250	13
...	.	1	...	...	..	..	...	..	...	...	...	...	...	1	.	2	...	2	...	...	...	3	...	6	2
..		1	...	..	.	...	...		...	8	2	...	...	...	..	...	...	1	1	...	...	...	...	...	...
46	10	12	2	...	.	15	3	41	10	27	5	31	6	29	7	34	9	37	9	22	4	22	7	33	8
...		...	...	..	...	...	...	...	...	...	...	...	...	..	...	...	...	..	...	...	.	...	..	...	...
...	...	...	...	..	...	.	..	..	...	...	...	...	...	...	..	...	...	...	...	..	..	...	...	...	...
...	...	..	.	...	..		...	...	..	...	...	...	...		..	...	...	...	...	...		...	...	...	...
1	...	...	.	...	.	...	...	..	...	.	...	...	...	...	...	...	...		..	...	.	...	...	...	...
128	14	397	33	638	63	63	6	134	20	418	28	214	17	216	27	445	32	627	40	497	37	456	36	307	25

TABLE No. 22.

Showing the number of new Cases of Sickness coming to the knowledge of the Medical Officer of Health during the years 1881 to 1903.

Year.	Small-pox.	Scarlet Fever.	Diph-theria.	Typhus Fever.	Typhoid Fever.	Puer-peral Fever.	Total Cases.
1881	15	434	20	...	131	3	603
1882	13	465	27	...	117	3	625
1883	6	301	15	...	96	3	421
1884	2	289	20	1	100	..	412
1885	4	229	28	...	58	2	321
1886	5	391	44	12	100	7	559
1887	3	1,775	127	2	119	5	2,031
1888	104	985	86	...	106	3	1,284
1889	1	680	39	...	56	5	781
1890	...	320	11	2	63	7	403
1891	...	238	29	...	112	4	383
1892	75	667	27	...	83	9	861
1893	416	442	25	...	70	9	962
1894	165	264	67	...	69	9	574
1895	137	216	70	...	109	5	537
1896	27	785	61	8	114	17	1,012
1897	...	332	38	2	86	10	468
1898	1	346	39	...	68	20	474
1899	2	822	71	...	92	11	998
1900	8	1065	94	...	72	21	1260
1901	2	679	56	...	40	18	795
1902	178	704	187	...	63	15	1147
1903	256	507	201	...	52	9	1025

TABLE No. 23.

Summary of Smallpox Cases treated in the various Hospitals during the years 1894 to 1903.

Hospitals.	1894.		1895.		1896.		1897.		1898.		1899.		1900		1901		1902		1903	
	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted.	Died.	Admitted	Died.
Moscow	74	9	94	14	8	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...
Cinder Hill...	57	8	30	8	...	...	...	...	...	...	...	...	..	...	...	...	9	1	1	...
Strinesdale..... .	...	...	...	...	19	...	...	...	1	...	2	...	27	7	2	..	175	9	278	22
Oldham Cases ..	..	.	...	...	.	...	...	...	..	...	...	...	8	3	...	..	175	9	255	21
Out-Township Cases	..	...	...	...	...	...	...	..	..	...	...	.	19	4	...	...	9	1	24	1
Totals	131	17	124	22	27	...	...	..	1	...	2	..	27	7	2	...	184	10	279	22

Moscow Temporary Hospital was closed in 1896.

Part III.

WORK OF THE HEALTH DEPARTMENT,

1903

STAFF.

The only alterations which have taken place in the staff of the Health Department during the year were caused by the death of the Chief Clerk, Mr. Joseph Chambers, who, after several months of illness, died in the month of November. By his death, at a comparatively early age, the Corporation, and especially the Health Department, have lost one of their most valuable officials. He received his appointment from the first Medical Officer of Health in the Borough (Dr. Sutton), in January, 1876, and thus at the time of his death had completed over 27 years of faithful and diligent service.

The Chief Assistant Clerk, Mr. John Whipp, was appointed by the Health Committee to fill the vacancy. Respecting the accommodation and offices for the staff, I can only say that I do not know any other large town where there is such a limited and unsatisfactory arrangement. Several attempts have been made by the Health Committee to obtain better accommodation, but so far they have been unable to obtain suitable premises. It seems most extraordinary that for departments supplying luxuries to the public most convenient acccommodation can be

found, while for those dealing with the health (nay, even the life and death) of the people are housed in a building deficient in size, without sufficient sanitary accommodation, and with certain conditions which I fear tend to spread disease rather than prevent it. The present staff is as follows :—

Chief Inspector of Nuisances :
THOMAS RUSHWORTH.

Meat Inspector and Inspector of Nuisances :
GEORGE WINTERBOTTOM, (Cert. & Meat Insp., Cert., San. Inst.)

Sanitary Inspectors and their Districts :
NAPOLEON BRIERLEY—St. Peter's (part of), Clarksfield and Waterhead Wards.

W. A. HOPKINSON—Werneth, Hollinwood, St. Paul's, and St. Peter's (part of) Wards.

JAMES BURNETT—Hartford, Westwood, and Coldhurst Wards.

WILLIAM TAYLOR (Cert. San. Inst.)—St. Mary's, Mumps, and St. James's Wards.

Inspector for the Factories, Workshops, Bakehouses, &c. :
WM. G. WRIGHT (Cert., San. Inst.)

Lady Inspectors for Shop Seats, Shop Hours, Female Workshops, &c. :
MISS SMITH (Cert. San. Inst., Cert., San. Sc., Vict. and Liverpool.
MISS ROTHWELL (Cert. San. Inst., and Cert. of Hygiene of School Life, San. Inst.)

Chief Clerk :
JOHN WHIPP.

Assistant Clerks :
A. L. HORROBIN, ELSON JACKSON, and L. WHIPP.

Disinfectors :
WM. CLARKE (Cert. San. Inst.), N. SCHOFIELD.

Matron Westhulme Hospital :
MISS WHITEHEAD.

Medical Officer of Health :
JAMES B. WILKINSON, M.D., D.P.H., F.C.S.

HOUSE INSPECTION.

During the year upwards of 3,000 houses have been visited and examined for one cause or another, and the drainage of 209 houses has been thoroughly tested, and notices issued for the remedying of the various defects found. Altogether 2,622 notices have been issued by the Inspectors for the removal or repair of unsatisfactory conditions causing nuisances. Of these 1,920 were complied with, and 547 of those not complied with were referred to the Health Committee to deal with. After the statutory order was made 436 of these conditions were remedied, making a total of 2,356 nuisances dealt with during the year. At the close of the year 111 orders were still uncomplied with.

The house accommodation is ample for the population as far as numbers go, but the practice of building the ordinary four-roomed house for the working classes does not give satisfactory bedroom arrangements where a family exists. Many of the houses built during the last few years, however, contain an additional bedroom.

The amount of insanitary property in the town is not large, and exists only in very small areas. The largest area of this kind of property has been under consideration several times during the year, with a view to scheduling it as an insanitary area.

Towards the close of the year notices were issued under the Housing of the Working Classes Acts for several small blocks of property, and some of these are still under consideration.

The following houses have been closed as unfit for human habitation under the provisions of the Oldham Improvement Act :—

Nos. 2, 4, 6, Back Hopwood Street.
Nos. 29 and 31, Water Street.
Nos. 1 to 8, Morgan Square.
Nos. 6 and 8, behind No. 4, Bates Street.
No. 11, Barn Fold.
No. 4, court 1, Smethurst Street.
Nos. 5 and 6, court 1, Egerton Street.
Nos. 5, 9, 13, Whiteley Square.
No. 10, Whiteley Street.
Nos. 1 and 3, court 4, Whiteley Street.

Three other back dwellings were closed pending their conversion, with the front houses, to through ones.

Several houses were also voluntarily closed by the owners.

COMMON LODGING HOUSES.

These premises are under the control of the Health Committee, and are supervised by special members of the Police Force. The accommodation is as follows:—

Number of Registered Lodging Houses..	16
Total accommodation at night	1,220
Number of persons occupying them during the year	257,978
Average occupation per night	706

The largest lodging house has accommodation for 285 persons.

There are also 33 common lodging houses in which the rooms are let for a week or longer periods.

These dwellings, or rather their inmates, again played a considerable part in the dissemination of Smallpox, not only in the town, but throughout the country. Until some

power of detention or control of those who have been in contact with this disease is obtained, there is little doubt they will continue to convey the disease from one place to another whenever it is at all prevalent. I found several cases in private houses where the only possible source of the disease, which could be ascertained, was that a tramp had called at the house about a fortnight previous to the onset of the disease. The proprietors of the lodging houses gave me every assistance they could, by notifying me of any suspected case and isolating the person until I was able to visit them.

OFFENSIVE TRADES.

There are 37 premises in the Borough devoted to these trades, and these, with the exception of two or three tripe dressing establishments, are small places. 1,073 visits have been paid to these premises, and it has been found necessary to serve 15 notices during the year for the removal of objectionable conditions; 13 of which have been complied with. One marine store has been added to the list during the year.

The following is a list of these trades in the Borough :—

Tripe Boilers	15
Marine Stores	10
Grease Works	5
Gut Scrapers	3
Fat Sorters	1
Hide and Skin Depots	2
Soap Boilers	1
Total	37

SLAUGHTER HOUSES.

These premises have all been personally visited during the year. They are all (56 in number) licensed annually. The slaughtering of animals on unlicensed premises is not allowed in the Borough, except by written permission from myself. During the year 5,728 visits have been paid by the Inspectors to these premises. This is an average of about 2 visits a week to each slaughter house. Of these visits the Food Inspector has paid 2,633. Twenty-three notices for the remedying of unsatisfactory conditions have been served, and all of these have been complied with.

Generally speaking, the slaughter houses are kept in a cleanly and satisfactory condition, but while some are, structurally, everything which could be desired, many are situated in somewhat dilapidated buildings by no means well adapted for the use to which they are put.

The appointment of a Special Food and Meat Inspector about 18 months ago has had a considerable effect on the class of meat killed on these premises within the Borough, and at the present time it is probable that very few (if any) diseased carcases find their way through our slaughter houses. The quality of the meat generally in the shops has considerably improved, and except in one or two shops, supplied with ready dressed meat from slaughter houses outside the Borough, there appears to be no attempt to dispose of diseased meat. I regret to say, however, that I have seen some very inferior meat in the town which had been purchased in the abbatoirs of a neighbouring city.

A glance at the table showing the various diseased conditions found will emphasize the necessity for appointing a fully trained Inspector.

In one instance two whole carcasses, both diseased, were seized in the slaughter house of a local butcher, where they had just been deposited by a cattle dealer from an adjoining district. Proceedings were taken, and, on the evidence, the magistrates decided they were not in the possession of the local butcher, as he had neither seen or accepted them, and fined the dealer £25. On appeal the court reversed this conviction, deciding that the meat was not in *his* possession.

SMOKE NUISANCES.

During the year 427 half-hourly observations were taken of smoke emission from various chimneys in the Borough, a considerably larger number than in the previous year, but of this number in only 15 was the 4 minutes' limit exceeded. In 4 instances it was the first offence of the Firms implicated, and the necessary notice was served. Seven firms were cautioned against a repetition of the offence, and two (one on two occasions) were proceeded against, and were fined 10s. in two instances and 20s. in one.

DAIRIES AND MILKSHOPS.

There were 350 milkshops on the register at the close of the year, an increase of 17 ; 661 visits were paid to them, and notices were served for 25 defective conditions, and 20 of them had been remedied at the end of the year.

There are also 73 dairies in the Borough in connection with a similar number of farms and cowsheds Nineteen notices for defective conditions at these were served, and all but one were remedied at the close of the year.

As already has been mentioned, there were a few cases of Typhoid in connection with the milk supply from one farm, and the supply from another outside the Borough was associated with a small outbreak of Diphtheria.

FACTORY AND WORKSHOPS ACT.

Factories.—The mill reservoirs have been kept under close observation during the year, but owing partly to the copious rainfall there were very few complaints as to their condition. Many of the mills have also been inspected as to the suitable provision of Fire Escapes, and under this heading 32 notices have been served.

A number of duplicates of notices issued by the Factory Inspectors have been received, and the work in compliance with these notices has been kept under observation.

Workshops.—At the close of the year there were 424 workshops on the register, being an increase of 8 over the previous year.

These premises have been regularly visited by the Inspectors (both male and female), according to men or women being employed; 139 notices were issued for defective conditions.

It will be noticed in Table 25 there are a large number of notices in connection with closets not complied with. This is due to a number of notices issued by the Factory Inspector towards the close of the year.

The following is a list of the various workshops registered within the Borough :—

Bakers	5	Machine Brokers	4
Blacksmiths	6	Mantle Makers	8
Blind Manufacturers	2	Marine Stores	2
Bookbinders	2	Milliners	66
Bottlers (Beer)	1	Mineral Water Manufact'rs	2
Brush Makers	2	Plumbers	4
Cabinet Makers	5	Saddlers	3
Carriage Builders	3	Shoe Makers	59
Cart Sheet Manufacturers	1	Skip Makers	5
Cloggers	55	Straw Workers	2
Confectioners	44	Tailors	56
Cotton Waste Dealers	14	Tinsmiths	10
Curriers	3	Upholsterers	2
Cycle Makers	3	Watch Makers	4
Drapers (Underwear and Skirts)	3	Wheelwrights	6
Dress Makers	52	Wringing Machine Manufacturers	1
Dyers	2	Wood Carvers	1
Electro-Platers	1	Paper Bag Makers	1
Drysalters (Chemists)	5	Roller Coverers	1
Joiners	8	Mackintosh Manufacturers	1
French Polishers	1	Coffin Makers	2
Heating Apparatus Manufacturers	1	Cane Workers	1
Hosiery & Stocking Knitters	12	Ice Cream Manufacturers	1
		Laundries	1

BAKEHOUSES.

New regulations for the Underground Bakehouses, under the Factory and Workshops Act, coming into force at the end of this year, it was arranged that all these premises should be visited in May, in order to give ample time for any alterations that were necessary before the certificate was required.

At the commencement of the year there were 44 underground bakehouses on the books, but 4 of these were not in use and were not required.

The remaining 40 were visited by the Chairman, Vice-Chairman, and myself, and 4 of these were deemed to be satisfactory.

Four were considered to be entirely unsuitable for the certificate, and various alterations and repairs were specified as necessary in the remaining 32 before it would be issued.

In 24 of these, the specified repairs, etc., were carried out ; in 5 the bakehouse was removed on to the ground floor : in 2 to an adjoining cottage.

At the close of the year 28 certificates were issued.

Most of these premises were small and of a domestic character, and in these cases it was not deemed necessary to require any elaborate alterations.

SHOP HOURS AND SHOP SEATS ACTS.

Visits are made both by the Workshop and Lady Inspectors to various shops under both these Acts. The Male Inspector has made 714 visits and served 10 notices, all complied with, and the Lady Inspectors 108 visits, served 22 notices, 19 of which have been complied with.

LADY INSPECTORS.

The two Lady Inspectors have compiled a summary of their work in Table 24, and from this table an indication will be gained of the kind of work they perform.

Their chief duties are—

1. To visit the houses at which births occur, and if there is no medical attendant to give the mothers instruction as to the proper feeding and management of the infants, and at the same time to impress on them the importance of ventilation, cleanliness, and sanitation of the dwelling. Any insanitary condition noticed is reported to the Chief Inspector.
2. To visit the female workshops, and also, as time permits, the shops, and make enquiries as to the observance of the provisions of the Shop Hours and Shop Seats Acts.
3. To visit cases of Puerperal Fever which may be reported.
4. To visit cases of minor infectious diseases (Measles, Whooping Cough, Chicken Pox, etc.) reported by the teachers from the various schools.
5. To give, as opportunity allows, cottage lectures to assemblies of mothers at various cottages in the town.

I anticipate that the knowledge diffused by their visits will, as time goes on, cause a considerable diminution in the number of deaths in infant life. Unfortunately, when Measles or Whooping Cough are prevalent the Inspectors' time is considerably occupied by visiting the cases, and thus they are seldom able to make return visits to the cottages to see that their instructions are carried out. It is often found by them that, by the time the notice of the birth is obtained, the children, by improper feeding or want of proper attention, have either died or been reduced to such a wasted condition as to render their recovery almost hopeless. The

instructions given by the Registrar General to local Registrars not to supply lists of the births to the Health Authority cause considerable delay in the homes being visited, and in consequence, I fear, often improper treatment and suffering on the part of the infants.

Miss Smith reports :—

"I often find that the parents are under the impression that starvation would result if the child was not fed on more substantial food than milk. I am generally thanked for my advice, which advice is often repeated to friends and neighbours. Proper teats for the bottles are obtained, and on revisiting the houses I rarely see a bottle with tubing used. Permission is readily granted me to look through the houses, and only in one or two cases have I been asked to call again for this purpose. The matters I most frequently have to call attention to are—to admit light and ventilate the bedroom, to empty the slops, air the bedding, clean the walls and floors, and to occupy more than one bedroom, and on revisiting I find my recommendations are generally carried out.

In visiting the shops I do not find that shopkeepers are always willing to hang up the card where it can be seen by the customers ; they prefer to hang it where only the shop assistants can see it. The people of Oldham receive my visits in a very kindly manner, are always ready to carry out my recommendations, and I receive many cordial invitations to call again."

Miss Rothwell reports :—

"The Women Inspectors are received on the whole very well by the mothers, and many have waited anxiously for the visit of instruction to be paid.

I find the rearing of infants is, in many cases, unsatisfactory, arising from ignorance and negligence, ignorance being predominant.

The first cause (ignorance) will take some time to remedy, and longer still to show its result, because the instruction is given to individual mothers, and takes up a great deal of time and effort on the part of the Women Inspectors.

In the cases of actual negligence, the constant visitation of these cases appears to do more good than anything else, for the constant expectation of these visits rouses the mothers up.

The prevailing use of the "Tube Bottle" has a serious effect on the health of the children.

The period of 6 weeks being allowed for the registration of births, many deaths occur before it is at all possible for them to be visited. Out of 568 deaths, 164 occurred under the age of 1 month, and 64 between the ages of 1 month and 2 months.

It is only within the last 3 months that facilities for addressing mothers have been available. These have been in the way of Mothers' Afternoon Meetings in connection with Sunday Schools, Womens' Guilds, etc. When an opportunity for addressing these mothers has presented itself it has been taken advantage of, and lectures on the care of Infants, and various lectures on Hygiene have been given. A few cottage lectures have also been given.

The female workshops, on the whole, are in a satisfactory condition. Not only have the workshops where

workers are employed been visited, but also the Domestic Workshops, in order to find out whether the clothing which is made up for other people is done under clean and sanitary conditions."

THE SALE OF FOOD AND DRUGS ACT.

During the year 201 samples of food were taken for analysis. This is a larger number than has ever been taken previously in one year. This number includes a few private samples not taken under the provisions of the Food and Drugs Act.

Of this number 6·9 per cent. were found to be adulterated, viz., 4 of Milk, 6 of Butter, 2 of Coffee, and 2 of Spirits.

Two of the butter samples were not taken in accordance with the provisions of Food and Drugs Act. In one case, where margarine was sold for butter, proceedings were taken, and the vendor fined £20 and costs; and in the other three cases, where the article sold was Irish butter, with an excess of water, the vendors were cautioned by letter.

In the case of three milk adulterations, where there was respectively 2 per cent., 7 per cent., and 10 per cent. of added water, the vendors appeared before the Health Committee and were cautioned. In the other case the milk contained $3\frac{1}{2}$ per cent. of added water, and had had 16 per cent. of the fat abstracted. Proceedings were taken before the magistrates, but the case was dismissed, the magistrates coming to the decision that the vendors sold the milk as skim milk, although no declaration was made and the price was 3d. per quart. In the coffee adulterations the samples were purchased, at two very small shops, kept by very illiterate people, whose whole stock of coffee did not amount to more than a few ounces,

which they sold in pennyworths. They were cautioned, and the same action was taken in the case of the two vendors of whiskey which contained a slight excess of water.

SEWERAGE AND DRAINAGE.

There is a complete system of sewerage in the town, a large proportion of which consists of properly constructed sewers and pipe drains. There are, however, a considerable number of stone drains still in existence. These, when opportunity allows, are gradually being converted to a more satisfactory type. On two sides of the town there are main intercepting sewers, which convey the sewage of the town to the sewage works. Except in one small portion of the town the sewage finds its way by natural gravitation to the works. From this lower portion the sewage is lifted to a higher level by a Shone's Ejector, the air being automatically compressed by the sewage coming from the higher levels. The combined system of drainage is in vogue.

The works for the purification of the sewage are outside the area of the town.

A considerable number of defective and blocked drains have been dealt with during the year, details of which will be found in the Inspector's Report on page 119.

No less than 415 waste-water closets have received attention from their defective condition during the year.

REMOVAL OF REFUSE.

The system in general use is that of pan closets, but the west and southern portions of the town are now almost entirely converted to the waste water system, and in

consequence one of the depots for dealing with the nightsoil has been entirely done away with.

The contents of the existing pans are collected at nights by the Corporation's own staff of men and horses, removed to the depot, and there mixed with shoddy dust and sold as manure. There is a good demand for this manure, and about 18,000 tons were sold during the year.

There is an increase of about 800 in the number of ashcans in use in the borough, and a decrease of 200 ashpits during the year. The contents of these (with the exception of a small portion still tipped) are conveyed to the destructors (of which there are 3) and there burnt. They are collected by the staff employed by the Corporation.

The burnt clinker is used after crushing and screening—the coarse material for making the filter beds at the sewage works, and the finer material for making mortar, and at one destructor for making paving flags.

The waste steam from the boilers at these destructors is used for the power in a repairing shop, two clinker crushing machines, flag making plant, mortar mills, electric light station, and for heating the water at one of the public baths.

I should be glad to see a much greater increase in the number of ashcans, and a corresponding decrease in the ashpits in the town. Such a change would be a great advantage from a health point of view.

The ashcans are emptied once, and where necessary, twice a week. The ashpits as often as required.

Fish offal, slaughter house refuse, and other offensive garbage is collected by arrangement with the owners of the various premises three times a week.

The number of sanitary pans, closets, ashpans, etc., in the borough is enumerated on the last page of the report.

WATER SUPPLY.

The water supply is from upland gathering grounds, either owned or under the control of the Corporation. It is of great purity, but in some portions of the gathering area there is a considerable amount of peaty soil, and the water from this area has a tendency to dissolve the lead in the service pipes. To remedy this the water is treated as it enters the reservoir.

Several analyses of the water have been made at houses where there has been any suspicion of lead poisoning, and in a few cases a considerable amount of lead has been found; where the water has been allowed to remain in the pipes for 12 hours as much as half a grain per gallon has been found, but in the greater proportion of cases less than 1-10th of a grain per gallon has been present.

In several instances it has been necessary to serve notices to put in fresh service pipes. In two instances where there were cases of lead poisoning it was found that water from the hot water tap had been constantly used for dietetic purposes.

The capacity of the various storage reservoirs amounts to about 2,000,000,000 gallons, or a supply for the borough and supply area of about 30 weeks.

The reservoirs at the close of the year contained about 28½ weeks supply.

MORTUARY, &c.

This building, together with the adjoining Post-mortem Room, Stables, and Coach-house for the Ambulances and Disinfecting Vans, was completed in the early part of the year, and this depot is now a very satisfactory establishment.

HEALTH LECTURES.

Towards the close of the year three most able lectures were given in the Free Library, under the auspices and at the invitation of the Royal Institute of Public Health, as follows :—

"Modern Discoveries in Preventive Medicine," by the President, Professor W. R. Smith.

"The Disposal of Refuse," by Sir William Ramsay.

"A Healthy Home," by Dr. Andrew Wilson.

The room on each occasion was crowded, and the great interest taken suggests that future lectures on kindred subjects would be much appreciated.

THE MIDWIVES' ACT.

The duties of the Council under this Act have been delegated to the Health Committee, and means have been taken to ensure the registration of the midwives in the town as soon as possible.

EDUCATION AND THE EDUCATION ACT.

At the close of the year the management of the Public Schools in the town becomes one of the duties of the Council, and the present seems an opportune time to indicate measures by which the health of the Borough may through them be influenced beneficially.

I. Infectious Disease.—There can be little doubt that the spread of Diphtheria, Measles, Scarlet Fever, &c., is considerably influenced by school associations with mild and undetected cases, and means should be available whereby every child showing symptoms of illness can be medically examined before being allowed to join a class.

By the instruction of the Educational Committee many of the Teachers now report regularly cases of suspected infectious diseases occurring among their pupils. These cases are then visited by one of the lady Inspectors, and instructions issued for isolation, &c By adopting this method it seems that the work of the Council officials is duplicated, as the Attendance Officer almost always visits the case before it is reported, and again if the child does not return to school at the termination of the isolation period, and there is no reason why the same person, if properly trained, should not perform the duties of both officials at one visit.

Medical inspection of the scholars has in most towns up to the present year been directed to one aspect only, viz., to ensure the attendance at school of all children, except those who are physically unfit, and in those partially incapacitated, to secure their education under the best possible conditions; but the other aspect ought also to be considered, viz., the prevention (for a time) of the attendance at school of those who by the nature of their illness are likely to cause injury to other children, and also of those who in consequence of physical weakness or incipient disease are deteriorating their own health and laying the foundation for permanent injury or an early death.

II. Hygienic Instruction.—Though I am aware the school curriculum is already a heavy one, and in conse-

quence am loath to suggest additional subjects, the education of the public in personal and public hygienic conditions is of such importance from a health point of view that I suggest the following methods for consideration —

1. Periodic lectures in the schools by qualified lecturers on simple hygienic subjects, such as Personal Cleanliness, Home Cleanliness, Ventilation, &c., &c., which can afterwards be exemplified in the object lessons by the ordinary teachers.

2. Special lessons from time to time to the older girls on Home Management, Care and Feeding of Infants, Infectious Disease, &c.

3. Evening Classes on simple Hygienic Subjects treated somewhat popularly for both boys and girls, especially the latter, and conducted by qualified teachers.

4. That the teachers in the schools be induced to attend a course of lectures in Hygiene, &c., specially arranged and given preferably by a qualified sanitarian.

The absolute ignorance which at present exists in the majority of households would have some chance of being dispelled if these or similar proceedings were put into operation.

REPORT OF
CHIEF INSPECTOR OF NUISANCES, 1903.

To the Medical Officer of Health,

SIR,

It appears to me unnecessary to offer any very extended remarks with respect to the work set forth in the various Tables submitted to you, which are compiled by your Staff of Inspectors from their year's labours, seeing that they indicate pretty clearly the work carried out.

Their duties are often of a complex and varied character, requiring much patience, time and oversight in determining the defects and causes, which lead to the insanitary condition of property.

Several large houses have been dealt with in the course of the year, and these have required constant and repeated visits, in testing by one means or another, the sources of nuisances from old drains and water courses, of which no one has apparently known anything, until the drainage of the property has become so offensive as to compel inspection, and eventually re-construction of the drainage.

Such work when once commenced can only be satisfactorily accomplished, by constant inspections and re-inspections

while the work is in progress, and necessitates almost daily visits on the part of the Inspectors for weeks, to secure satisfactory work being done on some properties.

Work of this kind minimises numerically the number of nuisances actually discovered, but, whenever necessary, owners and agents have been personally seen, and slighter defects, though of urgent importance, remedied.

The presence of the Smallpox Epidemic, during the greater part of the year, has also been a hindrance to more time being given to nuisance work.

The number of patients removed to Strinesdale and Westhulme Hospitals has been 579, only 61 less than in the preceding year.

A larger number of samples (201) have also been taken under the Food and Drugs Act than in any previous year, making further calls of time of each Inspector from the supervision of his district in regard to recurring nuisances.

A considerable increase in half-hourly smoke observations of mill chimneys has also to be recorded; 403 as against 147 in 1902.

In regard to the general features of the work carried out by each individual official, it is gratifying to say that everyone has sedulously striven to secure the removal, as speedily as possible, of any nuisance prejudicial to the public health, and is at all times willing personally to

sacrifice his time and pleasures, as far as possible for the interests and comfort of the public, whom they have to serve.

The Tables, which are presented, dealing with diseased carcases reported to or found in the course of inspections by the Meat Inspector, and which show that the total amount of unsound food destroyed amounts in the aggregate to 5 tons, 15 cwts., 3 qrs., 8 lbs., prove very conclusively that unremitting attention has been given to the supervision of animals coming into the town by railway or other routes and intended for human food.

Although the proceedings taken in one or two instances have proved abortive—from legal technicalities—there is not the slightest doubt that, the exposure of nefarious practices resorted to by unscrupulous dealers, in the preparation for human food of carcases of a doubtful character, has given this traffic a decided check.

As diseased conditions are liable to be found even in the best selected animals, it is far more honourable to report the discovery to the authorities than to try, by cutting and trimming, to deceive them.

It is the desire of most authorities to deal as generously as possible with the unfortunate individuals who may be subject to these losses, and who at the same time show diligence in reporting the diseased carcases.

Hitherto some members of the trade have been far too lax in giving notice of the occurrence of diseased and unsound conditions in animals they may have slaughtered.

In this and other ways avoidance of unpleasantness and annoyance, to vendors and purchasers, may be secured, and I have no hesitation in saying that, by the more frequent and early inspections of carcases, the quality of the meat offered for sale has been greatly improved during the past year.

Fortunately no outbreak of Contagious Disease in Animals has been recorded during the year.

Thanking you personally and on behalf of the staff for your ever willing guidance and advice on all matters affecting the health and well-being of this large industrial centre.

I remain,

Your obedient servant,

THOMAS RUSHWORTH,

Chief Inspector of Nuisances.

TABLE No. 24.

LADY INSPECTORS' REPORT, 1903.

	Visits paid.	Re-Inspection.	Notices served.	Notices complied with.
Births	3596	305	...	...
Deaths of Infants (under 12 months)	568	75	...	...
Defective Houses found	210	142	194	76
Workshops	316	29	19	19
Shop Hours Act	86	38	21	18
Enquiries for Shop Seats	22	2	1	1
Infectious Diseases...	505	59	2	2
School Notifications	1039	20	...	...
Special Cases	227	36	1	1
Cottage Lectures	8	...	...	...

TABLE No. 25.

SHOWING THE NUMBER OF WORKSHOPS REGISTERED, VISITS MADE, AND DEFECTS REMOVED.

* The work of the two Female Inspectors, with regard to Workshops and Shop Hours, will be found on Table 24.

No. of Workshops on Register December, 1902			416
,, ,, Discontinued during 1903			13
,, ,, Registered during 1903			21
,, ,, on Register December, 1903			424
* ,, Visits Paid	Female Inspectors	316	1620
	Male Inspector	1304	
,, Notices Served (Male Inspector)			120
,, ,, Complied			63
* ,, Visits under Shop Hours Act (Male Inspector)			714
,, Notices Served and Complied			10
Re-Inspections of Work in Progress or Under Notice			428
Miscellaneous Visits (to Owners, Agents, &c.)			272

Nature of Defects.	Notices Served.	Notices complied.
Workshops Repaired	13	12
Dirty Workrooms	10	10
Damp, Defective Roof, &c.	9	6
Defective Ventilation	10	9
Defective Water Supply	2	2
Defective Cellars	3	3
Overcrowding	2	1
Insufficient or no Closet Accommodation	29	4
Defective Closets	3	3
Privy Nuisances	117	16
Untrapped Drains	1	1
Defective Drains	7	6
Defective or Short Slop Pipes	3	2
Directly connected with Sewer	2	1
Fire Escapes	32	19
Defective Chimneys	2	2
Accumulations	11	11

8 Gully Traps have been fixed and 38 Yards of Channel Tiles and Drain Pipes laid or re-laid.

TABLE No. 26.

SHOWING THE NUMBER OF BAKEHOUSES REGISTERED, VISITS MADE, AND DEFECTS REMOVED.

No. of Bakehouses on Register, December, 1902	359
,, ,, discontinued during 1902	5
,, ,, registered during 1902	5
,, ,, on Register, December, 1903	359
,, Visits paid	933
,, Notices served	25
,, ,, complied	19
Re-inspections of work in progress or under notice	90
Miscellaneous Visits (to Owners, Agents, etc.)	58

Nature of Defects.	Notices Served	Notices Complied
Bakehouses Repaired	20	20
Dirty Bakehouses	3	3
Damp, Defective Roof, etc.	1	1
Defective Ventilation	6	5
Accumulations	3	3
Defective Cellars	56	52
Directly connected with Sewer	1	1
Defective Closets	...	..
Untrapped Drains	8	8
Defective Drains	7	6
Defective or Short Slop Pipe	2	2

3 Gulley Traps have been fixed, and 11 yards of Channel Tiles and Drainage Pipes laid or re-laid.

District	No. on Register	Where Baking is Done.					Kind of Oven Used.				
		Living Room	Living Room and Kitchen	Out Kitchen	Cellar	Bakehouse	Ordinary	Special Iron	Gas	Brick	Stove
No. 1	81	30	12	13	8	18	27	49	10	7	1
,, 2	76	26	8	15	9	18	27	42	6	2	2
,, 3	85	20	23	23	5	14	18	52	17	4	1
,, 4	47	16	4	14	4	9	15	28	7	5	1
,, 5	70	26	18	9	2	15	29	39	18	1	1
Totals	359	118	65	74	28	74	115	212	58	19	6

TABLE No. 27.

RETAIL MILK SHOPS.

No. of Milk Shops on Register, December, 1902...	333
,, ,, Discontinued during 1903	2
,, ,, Registered ,, ,, ...	19
,, ,, on Register, December, 1903	350
No. of Visits Paid	661
No. of Notices Served	16
No. of ,, Complied	12
Re-inspections of work in progress or under notice	21
Miscellaneous Visits (to Owners or Agents, etc.)	14

Nature of Defects.	Notices Served	Notices Complied
Houses Repaired	3	2
Dirty Houses	1	1
Damp, Defective Roof, etc.	2	1
Defective Ventilation	1	1
Defective Water Closets	...	...
Defective Cellars	...	...
Yards and Passages repaired and flagged	3	3
Directly connected with Sewer	1	1
Untrapped Drains	5	4
Defective Drains	6	5
Defective or Short Slop Pipes	3	2

3 Gulley traps have been fixed and 10 yards of Channel tiles and drain pipes laid or re-laid.

TABLE No. 28.

Showing the number of Smoke Observations taken and Inspections of Mill Lodges and Slaughter-Houses made during the years 1902-1903.

Fortnight ending		Smoke Observations.		Mill Lodges Inspections.		Slaughter-Houses Inspections.	
1902.	1903.	1902.	1903.	1902.	1903.	1902.	1903.
Jan. 4	Jan. 17...	...	21	155	196	183	137
,, 18	,, 31...	46	17	125	185	169	131
Feb. 1	Feb. 14...	24	29	225	140	207	155
,, 15	,, 28...	...	24	130	241	209	97
Mar. 1	Mar. 14...	3	27	242	111	203	99
,, 15	,, 28...	...	21	149	243	212	115
,, 29	Apr. 11...	...	10	229	113	175	60
Apr. 12	,, 25...	8	17	127	289	186	129
,, 26	May 9...	...	10	171	245	190	143
May 10	,, 23...	...	24	155	214	207	160
,, 24	June 6...	...	16	248	163	193	133
June 7	,, 20 ..	10	16	134	321	173	137
,, 21	July 4...	...	26	247	244	233	165
July 5	,, 18...	...	17	231	198	208	123
,, 19	Aug. 1...	...	23	208	274	235	141
Aug. 2	,, 15...	8	22	229	164	208	129
,, 16	,, 29...	5	14	141	262	208	99
,, 30	Sep. 12...	3	...	114	115	52	85
Sep. 13	,, 26...	2	15	138	214	160	55
,, 27	Oct. 10...	...	...	190	189	126	121
Oct. 11	,, 24...	...	15	106	231	172	108
,, 25	Nov. 7...	...	26	108	225	116	128
Nov. 8	,, 21...	...	5	171	241	142	105
,, 22	Dec. 5...	26	14	237	216	134	95
Dec. 6	,, 19...	5	11	94	222	118	127
,, 20	,, 31...	7	7	132	277	168	118
January 3, 1903 ...		...	...	135	...	86	...
Totals		147	427	4571	5524	4673	3095

TABLE No. 29.

HALF-HOURLY SMOKE OBSERVATIONS,
taken from December 22nd, 1902, to December 19th, 1903.

Total Observations taken.	No Black Smoke.	Under 1 Minute.	Under 2 Minutes.	Under 3 Minutes.	3 and 4, both inclusive.	Over 4 Minutes.
427	103	75	86	76	72	15
Percentage ...	24·12	17·56	20·14	17·80	17·10	3·51

TABLE No. 30.

LIST OF FIRMS REPORTED TO HEALTH COMMITTEE DURING THE YEAR 1903.

NAME OF MILL	Where Situated	No of Boilers	Length of Boilers	Diameter of Boilers	Coal Consumption Weekly	No. of Boilers Working	Nature of Appliances Fixed.	How disposed of
			ft.	ft. in.	tons.			
Vale.....	Clegg Street.....	1	30	7 0	40	2	Caddy's Bars and Induced Draught	Notice Served
		2	30	8 0				
Pine	Sherwood Street ...	5	30	8 0	120	4	do. do. ...	do.
Commercial No. 2	Glodwick Road ...	2	30	7 0	40	2	No Appliances.....	do.
Export	Chadderton Road...	1	30	7 0	17	1	do.	do.
Werneth..... ...	Henley Street, No.1	3	30	8 0	50	2	Butterworth's Sectional Bars	Cautioned by Committee
Cambridge	Atkinson Street ...	2	30	7 0	20	2	No Appliances.....	do. do.
† Highfield	Chadwick Street...	1	30	8 0	42	3	Broadbent's Air Regulators	do. do.
		3	28	7 0				
Woodstock	Nr. Royton Junct..	4	30	8 0	66	3	do. do.	do. do.
Gresham	Main Road	4	30	7 0	40	3	No Appliances.....	do. do.
Bank Top No. 2...	Edmund Street ...	3	30	8 0	65	3	Caddy's Bars	do. do.
North Moor	Westhulme Street..	4	30	8 0	60	3	Do.	do do.
Pine	Sherwood Street...	5	30	8 0	100	4	Do. with Induced Draught	Fined 20/- and Costs
Pine	do. ...	...	...	...	...	...	Do.	Fined 10/- and Costs
Pearl	Netherhey Street...	5	30	8 0	110	4	Wilton's Furnaces	Fined 10/- and Costs

† Cautioned by Health Committee on two occasions.

TABLE No. 31.

SMOKE PROSECUTIONS DURING 1903.

No. of Firms Fined.	Amount of Fine.	No. of times previously prosecuted.
1	10/- and Costs	11
1	10/- ,, 20/- ,,	1

TABLE No. 32.

NATURE OF SMOKE APPLIANCES IN USE IN THE BOROUGH OF OLDHAM, 1903.

Name of Appliances.	No. of Mills.	No. of Boilers.
Cass's Coking Machines	3	10
Dyson & Williamson's Coking Machines...	1	3
McDougall's do. ...	1	1
Bennis's Sprinkling Stokers	2	6
Proctor's do.	6	18
Meldrum Bros.' Forced Draught Furnace	6	7
Granger's do. do. ...	1	1
Wilton's do. do. ...	1	5
Broadbent's Louvre Air Regulators... ...	18	60
†Broadbent's Steam Pokers	1	6
Caddy's Induced Draught Furnace... ...	5	13
Caddy's Tubular Bars	7	21
Yates & Thom's Rocking Bars	4	10
Butterworth's Sectional Bars	8	36
Wilson's Moveable Bars	2	8
Holden's Hollow Bars and Dead Plates	1	2
Hollow or Split Bridge Walls	5	12
Taylor's Patent Bridge Walls	1	3
†Whittle's Steam Injectors	2	7
Martin's Swing Doors	2	10
Sanger and Webster's Patent	1	2
	78	243

Where no Appliances are fixed—94 Mills ; 209 Boilers. There are also about 70 Workshop Chimneys not on books.

†Not used at present.

TABLE No. 33.

SAMPLES OBTAINED UNDER THE "SALE OF FOOD AND DRUGS ACT."

Year.	Total.		Milk.		Butter.		Bread and Flour.		Other Groceries.		Wines, Spirits and Beer.		Sundries.	
	No. of Samples	Percentage Adulterated	No. of Samples	Percentage Adulterated	No. of Samples.	Percentage Adulterated	No. of Samples.	Percentage Adulterated.	No of Samples.	Percentage Adulterated.	No. of Samples.	Percentage Adulterated.	No. of Samples.	Percentage Adulterated.
1876	74	27·0	38	42·1	7	...	6	...	23	17·4	...	...	...	..
1877	81	23·4	34	26·5	...	...	21	.	.	...	20	50·0	6	...
1878	74	25·7	55	21·8	..	.	...	..	12	8·3	6	100·0	1	...
1879	77	14·3	54	20·4	...	...	12	...	6	...	3	.	2	...
1880	87	21·8	43	27·9	8	12·5	8	...	22	18·2	6	33·3	...	...
1881	100	10·0	67	10·4	13	...	.	...	10	10·0	7	28·6	3	...
1882	100	19·0	44	22·7	15	33·3	4	...	17	...	13	30·8	7	...
1883	101	12·9	43	16·3	8	37·5	2	...	20		18	16·6	10	..
1884	85	8·2	47	2·1	11	18·2	.		8	37·5	8	12·5	11	...
1885	63	15·9	43	18·6	17	11·7	...	...	3		..	...	...	...
1886	62	9·7	40	5·0	9	1·1		...	13	23·1	.	...	...	...
1887	75	8·0	57	8·8	4	...	4	...	6	16·6	4	...	...	...
1888	90	8·9	70	8·6	4	25·0	...	...	4	25·0	8	...	4	..
1889	98	6·1	80	6·2	5	20·0	...	.	4	.	6	...	3	.
1890	98	6·1	75	6·6	7	...	...		6	16·6	4	...	6	...
1891	119	5·9	75	4·0	13	23·1	...		27	...	4	25·0	...	...
1892	90	1·1	68	1·5	3	...	...	...	7	..	4	..	8	...
1893	106	10·4	84	8·3	7	42·8	...	..	6	...	3	33·3	6	.
1894	139	2·1	83	3·6	18	...	6		26	...	3		3	..
1895	147	6·1	120	5·0	11	...	...	...	1	...	6	...	9	33·3
1896	154	6·5	138	6·5	9		...	...	1	...	6	16·6	...	...
1897	169	3·0	150	2·0	8	25·0	..	...	7	...	...		4	...
1898	75	4·0	61		14	21·4		...	...	..	...	.	...	
1899	86	4·6	59	1·7	27	11·1		...	..	...	..		...	..
1900	127	12·6	72	8 3	29	*24·1	...	...	8	...	18	16·6	.	...
1901	155	7·1	109	6·9	34	11·8	...	...	8	...	...	...	4	...
1902	174	2·3	118	1·7	26	3·8	...	...	23	4·3	5	...	2	...
1903	201	7·0	149	2·7	20	x30·0	...	...	23	8·7	9	22·2	..	...

* Excess Water.

x Two of these samples were not taken under the Food and Drugs Act.

TABLE No. 34.

MAGISTERIAL PROCEEDINGS, 1903.

No. of Cases.	Particulars of Complaint.	How Disposed of.	Penalties. £	s.	d.
3	Smoke Nuisance	Two fined 10/- and costs and one 20/- and costs	2	0	0
1	Exposure while suffering from Smallpox.....	Fined 10/- and costs ...	0	10	0
1	Milk Adulteration	Dismissed	...	...	...
2	Butter Adulteration.....	Two fined £20 and costs.	40	0	0
1	Unlabelled Margarine ..	Merged with Butter Adulteration	...	...	...
2	Being in possession of Diseased and Unsound Meat	One dismissed with a caution and one fined £25 and costs, but conviction quashed (on appeal) at Quarter Sessions, Nov. 7th, 1904.....	...	...	...
1	Aiding and Abetting ...	Withdrawn	...	...	..
2	Obstruction whilst in execution of duty	One fined 10/- and costs and one 20/- and costs	1	10	0
13		£	44	0	0

FOOD INSPECTOR'S REPORT.

Visits to Markets	901
Do. Cattle Wharves	989
Do. Meat Shops	4,286
Do. Fish Shops	862
Do. Fruit and Vegetable Shops	1,297

SLAUGHTER HOUSES.

VISITS MADE AND DEFECTS REMEDIED.

No. on Register, December, 1902	56
No. lapsed during 1903	1
No. newly licensed during 1903	1
No. on Register, December, 1903	56

Nature of Defects.	Notices Served.	Notices Complied.
Accumulations of Refuse	2	2
Defective Floors	3	3
Without Copies of Bye-Laws	6	6
Without Name Plate	4	4
Defective Drains	1	1
Blocked Drains	1	1
Without Refuse Receptacles	4	4

FARMS, COWSHEDS, AND DAIRIES.

VISITS MADE AND DEFECTS REMEDIED.

No. of Farms on Register, December, 1903	72
No. of Cowsheds ,, ,, ,, ...	1
No. of Dairies ,, ,, ,, ...	73

Nature of Defects.	Notices Served.	Notices Complied.
Defective Ventilation	2	2
Do. Floors	3	3
Do. Drains	4	4
Blocked Drains...	1	1
Defective Privy...	1	1
Do. Manure Pits	2	1
Do. Roof	1	1
Dirty Shippon	1	1
Dangerous Pit Shafts	3	3

SUMMARY.

	Visits paid.	Notices served.	Notices complied with.
Slaughterhouses	2,633	21	21
Farms	176	12	11
Dairies	163	6	6

DISEASED OR UNSOUND FOOD DESTROYED.

	Tons.	Cwts.	Qrs.	Lbs.
8 Sheep	0	4	2	19
13 Pigs	0	2	2	10
5 Calves	0	2	3	14
16 Rabbits	0	0	1	26
11 Poultry	0	1	0	0
Meat	1	8	3	11
Offal	1	11	3	8
Fish	0	5	1	27
Fruit	0	18	0	5
Total	5	15	3	8

The following is a summary of diseased, etc., animals reported to or found by the Meat Inspector during the year :—

Diseased Conditions.	No. Reported.	No. Found by Inspector.	Total.
Tuberculosis	38	41	79
Hydatids	1	6	7
Pleuritis	0	1	1
Injured in transit	10	9	19
Smothered	4	6	10
Overkept Foods	5	77	82
Liver flukes	1	4	5
Strongylus	0	3	3
Fevered Meat	1	2	3
Garget	0	4	4
Actinomycosis	1	0	1
Diarrhœa	4	0	4
Fatty Liver	1	0	1
Diamonds	1	0	1
Nephritis	1	0	1
Cancer	1	0	1
Starved	7	5	12

INSPECTORS' ANNUAL REPORT, 1903.

Total Number of Reports of Nuisances and Notices Served	2622
Total Number of Notices complied with	1920
Total Number of Notices complied with Order of Committee in 1903	436
Number of Complaints Received and Visited	552
Re-Inspection of Nuisances under Notice	8120
Number of Cases dealt with by Health Committee in 1903 ...	547
Number of Cases remaining unabated	111
Number of Cases dealt with by the Magistrates in 1903	13

House-to-House Inspection	—
Total Number of Houses Inspected on Complaint...	357
Houses Repaired...	43

	Notices Served.	Notices Complied with
Dirty Houses	44	37
Damp, Defective Roof, &c....	593	526
Defective Ventilation	31	17
Defective Cellars	78	65
Privy Nuisances	885	810
Ashpits	123	90
Defective Water Supply	141	119
Overcrowding	5	4
Unfit for Habitation	15	12

DRAINAGE DEFECTS.

	Notices Served.	Notices Complied with
Blocked Drains	453	434
Defective Drains	210	190
Gully Traps improperly laid	...	...
Drain inlets untrapped or defectively trapped	128	188
Waste Pipes and Sloppipes directly connected with drain	38	41
Waste Pipes improperly trapped	6	2
Slop Pipe, defective or improperly ventilated	212	172
Defective Water Closets	38	38
Defective Waste Water Closets	496	496
New Water Closets Provided	28	8

No. of Smoke or other Tests, 154. No. of Houses Tested, 209.
No. of Defects found, 95. 1001 yards of Channel Tiles and Drainage Pipes have been laid or re-laid during the year.
Traps fixed, 188. Ventilating Grids, 3.
Houses connected with Main Sewer, 10.

	Visits Paid.	Notices Served.	Notices Complied with
Bakehouses	999	25	21
Dairies and Cowsheds	733	5	2
Farms	143	...	...
Pigsties	1091	1	1
Slaughter Houses	3095	2	2
Offensive Trades	1073	15	13
Mill Lodges	5524	5	5
Factories and Workshops	1186	116	63
Shop Hours Act	720	9	10

Samples taken under Food and Drugs Act	201
Letters written to Property Owners or Agents, &c.	50
Miscellaneous Visits, &c	2255
Privies inspected	8563
New Privies built	7
Ashpits built, or new Ashcans provided	18

Yards and Passages Repaired and Flagged	56
Erections in Yards reported	—
Defective Urinals	7
Accumulation of Offensive Matter	193
Carcases of Animals in Water	3
Stagnant Water	32
Manure Heaps	8
Manure Pits built	3
Poultry in Houses	14
Dust and Fly from Mills	—
Low or Defective Chimneys	12
Dangerous Places reported	76
Coal Gas Nuisances and Escapes reported	10
Dead Bodies removed to Mortuary	12
Fire Escapes	20
Smoke Observations	403

Visits to Cases of Infectious Diseases	1784
Visits to Cases of Phthisis	11
Cases removed to Hospitals	579
Houses Stripped or Cleansed after Infectious Disease	104

HOUSES AND CLOTHING DISINFECTED.

Number of Houses Disinfected during the year	906
Number of Rooms do. do. do.	2295
Number of lots of Clothing Disinfected during the year	904
Number of Articles do. do. do.	9966
Number of Articles destroyed do. do.	174

CLOTHING, &c., 1902-1903.

Articles.	Disinfected.		Destroyed.		Totals.	
	1902.	1903.	1902.	1903	1902.	1903.
Blankets	1289	1232	2	1	1291	1233
Sheets	811	827	2	15	813	842
Pillows	1570	1478	13	22	1583	1500
Bolsters	761	700	6	3	767	703
Quilts.....	1227	1263	5	3	1232	1266
Mattresses	18	58	34	40	52	98
Beds	994	968	30	39	1024	1007
Carpets	11	7	3	2	14	9
Rugs	119	105	...	...	119	105
Curtains...	23	53	...	13	23	66
Clothes	2327	2502	38	22	2365	2524
Sundry Articles ...	285	359	10	39	295	398
Total	9435	9552	143	199	9578	9751

INFECTIOUS CASES, 1902-1903.

(Cases and Visits).

	1902.	1903.
Number of Cases	1147	... 1099
Number of Visits	2116	. . 1784
Number of Visits to Cases of Phthisis	118	... 11

SANITARY DEPARTMENT, 1903.

RHODES BANK.

Number of Sanitary Pans in the Borough		15696
Do.	Cesspools, &c., in the Borough	25
Do.	Water Closets do.	2669
Do.	Waste-water Closets do.	10573
Do.	Latrines do.	1203
Do.	Ashpits do.	9716
Do.	Ash Cans, &c. do.	6055
Do.	Houses represented	34000
Do.	Mills, Workshops, &c. do.	547
Do.	Churches, Schools, &c. do.	207

NIGHTSOIL DEPARTMENT.

Number of Sanitary Pans Emptied during the night		872670
Do.	Cesspools, &c., do. do.	16
Do.	Collections of Butchers' Offal during the night	4392
Do.	do. Fish Offal do.	13397
Do.	Loads of Excreta collected	9104
Do.	do. Butchers' Offal collected	629
Do.	do. Fish Offal collected	720
Do.	do. Shoddy Dirt collected	4819
Do.	Tons of Manure sent out from Higginshaw	15250
Do.	do. do. Bower Clough	3234
Total Number of Tons sent out		18484

ASHES DEPARTMENT.

Number of Ashpits Emptied during the day		49353
Do.	Ash Cans do. do.	289283
Do.	Loads of Ashes taken to Destructors	26707
Do.	do. do. Corporation Tips	4439
Do.	do. do. Other Tips	4404
Do.	do. Clinker removed	4610
Total No. of Loads removed		40160

DESTRUCTORS.

Quantity of Ashes, Fish Offal and Garbage consumed :—	Tons	Cwt
Rhodes Bank Destructor	14171	7
Robin Hill ,,	7759	5
Hollinwood ,,	7854	17
Total	29785	9

Quantity of Mortar Sold :—	Tons	Cwt.
Rhodes Bank Destructor	1316	12
Robin Hill ,,	1067	15
Hollinwood ,,	837	4
Total	3221	11

FLAG MAKING DEPARTMENT.

	Sq. Yds.
Quantity of Flags made	24331
Do. sold	19453

County Borough of Oldham.

THE

TREATMENT

— OF —

OLDHAM SEWAGE

During the Year 1903.

JAMES B. WILKINSON,
M.D., C.M., D.P.H., F.C.S.,
Medical Officer of Health.

Town Hall, Oldham.

Appendix.

OLDHAM SEWAGE WORKS.

POPULATION - - - - - - 138,786.

AREA - - - - - - - - - - 4,729 acres.

	Dec., 1902.	Dec., 1903.
No. of Sanitary Pans in Borough - -	17,268 ...	15,696
,, Waste Water Closets in Borough	8,856 ...	10,573
,, Trough Closets in Borough - -	983 ...	1,203
,, Clean Water Closets in Borough	2,598 ...	2,669

The purification of the Oldham Sewage has been carried on under the same conditions as in the previous years.

Briefly, the system consists of—

(1) Two Detritus Tanks with coarse and fine screens, each fitted with revolving rakes and chains, and buckets for removing the detritus deposited in these tanks.

(2) Twelve Sedimentation Tanks, each having a capacity of about 175,000 gallons. One of these is used as a covered septic tank.

(3) Thirty filter or bacteria beds.

All the sewage, which reaches the works, must pass through both the detritus tanks and the sedimentation tanks. As far as possible it then passes through the bacteria beds, having a contact of from two hours and upwards. Up to the close of the year, however, a sufficient area of beds had not been constructed to deal with the

whole of the normal flow, except in very dry weather. No chemicals were used for precipitation except for two or three weeks in the summer, when the sewage was very concentrated.

During the year six new filter beds have been completed and put into use. These filters have an average depth of 3 feet, and a total area of about 6,900 square yards, and a full capacity of 1,164,000 gallons. As the working capacity is about one-third of this, and the beds are usually filled twice daily, this increase allows for the additional treatment of about three quarters of a million gallons of sewage daily.

The working of the beds indicate that those beds constructed of crushed and screened clinker from the destructors will in the long run prove more satisfactory than those filled with mill ashes, as the clinker has not the same tendency to break down as the ashes.

The increase in the number of water and waste water closets in the town has resulted in a considerable increase in the amount of sludge deposited in the tanks, and as this material is of a highly putrescible nature, not only has the pressing of it been more difficult, but owing to the rate of flow through the tanks (in consequence of the absence of storm tanks), more solid material has passed on to the filter beds. This deposit tends to diminish their capacity, and will ultimately necessitate their renewal, and it should also be borne in mind that the necessity for over-working the beds (owing to insufficiency of area) has a similar effect.

During this year about 450 tons of sludge have been pressed in excess of that pressed in the previous year.

I have been furnished with the following able report of the actual working during the past twelve months by Mr. Valentine :—

As a consequence of the heavy rainfall of the year, and because as yet no separate treatment is available for the storm water, there has flowed through the tanks at Slacks Valley a volume of raw sewage much in excess of previous years. During the year a total daily flow of 12,000,000 gallons and above has been common ; and taking into consideration that the total tank capacity is under 2,200,000 gallons the facility for adequate settlement in such cases is very meagre. Could the sludge in the tanks be disposed of in a more speedy fashion, the necessity for further tank accommodation would be much less pressing. The provision of a storm water overflow would no doubt also be of the greatest help, and in more senses than one.

Much stress has been thrown upon the tank effluent main carriers, and it is a great surprise that the middle carrier, constructed in timber, has not collapsed on more than one occasion during the year.

The sewage is becoming stronger. This is owing, doubtless, to the increasing number of slop closets connected to the sewers. It is also a remarkable fact that, other things being equal, the sewage on Monday and Tuesday is much stronger than on other days of the week. This may be explained by stating that the " washing days " are on these two days. I am also given to understand that the slaughtering of animals for human consumption is mainly practised on Tuesday, on which day an excessive amount of floating solidified fat is found in the sewage. Another curious fact, brought to light by means of the daily analyses, is that since " short time " was adopted in the cotton mills in the Borough, the " washing day " has, to a great extent, been removed to Monday. No doubt the involuntarily " playing " mill girls have been pressed into service at home on Monday.

It has been mentioned previously that during the times of storm the tank capacity is too small. Owing to certain difficulties in the pressing of the tank sludge, there has never been in use at any time, apart from periods of very heavy flow, more than seven, occasionally eight, tanks. But during storm, the remaining three or four empty (or partially empty) tanks have been requisitioned, in order to promote a more efficient settlement of solids in the sewage. At such times the flow in the main

effluent carriers has been so great that I have been compelled, in order to avoid undue flooding of the land adjacent to the carriers, to run the tank effluent continuously for hours at a stretch upon and through the filters. At such times the beds have been filled, and then the exit valves have been so arranged that the filtered or strained effluent streams therefrom at the same rate as the tank effluent rushes upon the beds. In every case a good percentage purification is obtained, as the table below will show, and the filtered liquors invariably keep "sweet" in the incubator, even though there is present an abnormal quantity of suspended matter, both in the tank and, in a much reduced ratio, the filtered liquors. The following are the results of the Analyses in grains of oxygen consumed per gallon in four hours' tests.

	Storm Sewage.	Storm Tank.	Storm Filtrate.	Length of Filtration.
Oct. 8, ...	2·11	1·48	·85	14 hours.
,, 14, ...	1·71	1·37	·56	13 ,,
,, 19, ...	1·82	1·48	·56	2 ,,
,, 22, ...	2·87	2·52	1·00	2 ,,
,, 27, ...	6·27	2·75	·92	13 ,,
Nov. 2, ...	1·91	2·42	·90	12 ,,

I may venture the opinion that an occasional but rare flushing of the bacteria beds with a comparatively very weak and fairly well settled tank effluent is of benefit to the efficient working of the beds. I am also strongly of opinion that during periods when the flow is much above that of the normal, clean tanks should be used for the greater portion of the flow, though there is no reason why a *small* proportion of the flow at such times should not be sent through the ordinary settling tanks then in use. Much of the suspended matter in the storm tank effluent, as at present obtained, probably comes from the previously settled sludge in the tanks, disturbed by the in-rushing waters.

The bacteria beds have answered to the work put upon them during this abnormally wet year in very efficient style. Apart from periods of continuous filtration, on several occasions many of the beds have been filled thrice a day, though this is not shown on the diagram at the end of the Report.

Periodical measurements show that, as in 1902, the capacity of any bed gradually decreases with increasing use. Periods of prolonged rest modify this falling away in capacity, though to a small extent. At the same time the efficiency increases. In all but two cases the filters have

now cross shoots introduced upon their surfaces. By this means a much better distribution is obtained, and at the same time the settled sludge in the shoots is less liable to be disturbed and washed upon the surface of the filtering material. These shoots are periodically cleaned by means of a "squeegee."

During the year every filter has had more or less rest, during which time the surface has been thoroughly well raked, turned and levelled up, and where necessary, renewed; much of the black matter immediately under and adjacent to the shoots has at the same time been taken out. In order to cope with the inordinate growth of weeds in the summer, the services of three men were temporarily engaged.

With regard to the time of contact, a more elastic system has been used than in previous years. The factors which must be taken into consideration in determining the length of contact are—

(a) The strength of the sewage, and therefore of the tank effluent.

(b) The time of day.

(c) The day of the week.

(d) The age of the particular filter being filled.

The time varies from two to six hours, and has occasionally reached ten hours in the case of new filters.

The method of emptying and sampling have been the same as in the previous year After sampling—in other words, when the filter is half empty—the valve is opened full bore. In this way the drains are kept well flushed and clean, and subsequently better aeration is induced.

The period of rest has mainly depended upon the character of the liquor used in the previous filling. A strong tank effluent has necessitated that a longer rest (say five to six hours) be given to a bed, than the rest where only a very dilute tank effluent has been filtered. Two hours rest with draining is quite sufficient in such a case.

During the year ending December 31st, 1903, there flowed through the tanks 2,062,406,000 gallons, or an average daily flow of 5,647,688 gallons. The average for the previous year was 4,016,789 gallons.

The total expenditure incurred was £2,550 6s. 5d., an increase on the previous year of £8 7s. 1d.

The cost of treatment and purification per million gallons was £1 4s. 9d.

The table below shows the amount of pressed sludge (of about 50 per cent. moisture) dealt with at the works.

	Weight of Pressed Sludge containing Slaked Lime. Tons	Weight of Quick Lime. Tons	Cwts.	Qrs.
January	411	47	19	0
February	553	40	6	2
March	571½	47	8	1
April	539½	33	4	1
May	539	30	4	3
June	466½	25	9	0
July	440	25	7	0
August	418½	28	11	1
September	526	31	8	0
October	420	25	2	0
November	406½	26	3	3
December	464½	27	3	0
	5756	388	6	3

Several expedients have been tried, with more or less success, to overcome certain seemingly inherent difficulties in connection with the efficient and speedy pressing of the sludge. It seems obvious that the solution is to be found in good mixing with some form of quick-lime, and in such a way as to ensure the minimum of danger and unpleasantness to the men undertaking the duty of mixing.

During the year detailed experiments have been carried out as to the profitable extraction of the fat from the sludge deposited in the tanks. The percentages of fat obtained in the sludge certainly warrant, in face of the experience gained in other towns in England and the Continent, the matter being taken to a further issue. The fat obtained is stearic acid, of a good quality, but contaminated with much black colouring matter. Experiments are now being carried out, the object of which is to free the stearin from this objectionable colour, and so render it of use for commercial purposes. The following table gives the results of certain of these experiments :—

No. of Tank.	Time in Use.	General character of Weather.	Percentage of Fat on Dried Sludge.	Mineral Matter in Sludge.
I.		Very rainy	11·3	
III.	9 weeks	,,	11·0	59
IV.	9 ,,	,,	12·2	55
VI.	9½ ,,	,,	10·2	55
Thick scum from large lime tank, pumped in some weeks previously from ordinary settling tanks			31·9	40·4
VII.	12 weeks	Earlier portion—Very wet.... Later portion—Fairly wet....	12·3	
VIII.	10 ,,	Fairly wet	19·7	47·3
X.	9 ,,	Normal weather	23·6	49
Thick scum of No. XI. tank (partially septic)			25·3	
V.	14 weeks	Fairly wet	17·8	
IX.	14 ,,	Fairly wet, but storm water excluded from tank	21·9	

The dried sludge cake containing the fat burns easily, and would doubtless possess a good calorific value, especially if mixed with coal dust. The inorganic or mineral matter, which is estimated by burning the cake, igniting at a high temperature, and weighing the residue, varies roughly according to the general weather experienced during the period the tank had been in operation. Then rainy weather brings down much sand and road grit, and consequently the inorganic residue is much larger than would be the case were the weather of a dry description. The use of storm tanks would, of course, reduce the mineral matter in the ordinary settling tanks, and at the same time obviously increase the percentage of fatty matter.

It may be found possible to utilise the *fat-extracted* sludge as a manure. Analyses are now being carried out, the object of which is to determine the percentage composition of the extracted cake, especially with regard to the elements which are of use from an agricultural point of view.

It is known that the treatment of sludge at present is a dead loss in every way, and any method would doubtless be welcomed which could reduce this loss, not to speak of a profit, and at the same time obviate the difficulties which would accrue when the valley at the works has received its full quota of dumped sludge.

RE-TRIAL OF THE SEPTIC SYSTEM.

Detailed and exhaustive experiments were carried out in 1901 by my predeeessor, Mr. A. S. Wylie, as will be seen from the annual report for that year. In a general way, it was eoneluded that the septie system could be well adapted for the treatment of Oldham Sewage, and with that opinion I concur.

The experiments of 1901 were earried out under one great disadvantage. The filters B and C were of sueh a size that, in normal weather, eight or nine hours were required to fill them, using the effluent from tank No. 11, which was aeting for the nonce as an Open Septie Tank. Reeourse was had to the floating arm in order to fill the beds somewhat more expeditiously.

In order to overeome this disadvantage two filter beds, L and M, were eonstrueted adjaeent to but on the opposite side of the septic tank effluent carrier supplying B and C.

The area of L and M, whieh form the first eontaet, is as follows :—

L = 175 square yards ; depth 1 yard, representing a full volume of about 29,500 gallons ($6\frac{1}{4}$ gallons = 1 eubic foot). Capacity on *first* filling, the clinker already in situ, from fresh water meter = 17,000 gallons.

M = 175 square yards ; depth 1 yard, representing a full volume of about 29,500 gallons. Capaeity on *first* filling from fresh water meter = 17,000 gallons.

Both beds are loaded with ungraded elinker from the destructors.

The area of D and E, whieh form the second eontact is as follows :—

D = 89 square yards ; depth 1 yard.

E = 89 square yards ; depth 1 yard.

D and E are both well below the level of L and M.

It should be mentioned here that both D and E leak very badly, as was mentioned in the 1901 report, but the best has been done to evade this great disadvantage.

The system in vogue has been to fill L and M together with the effluent from the elosed septie tank No. 12, and allow three hours eontaet. The middle portion of the effluent from L is sent upon D until

that bed is full, when the excess from L is diverted down the effluent culvert. The effluent from M is run upon E until that bed is full, when the exit valve of E is opened, the water from M meanwhile running upon E as before, so that water streams from the partially-opened valve at the same rate as the liquid is pouring on the surface.

It is impossible to hazard a guess, or to calculate the quantity of sewage passing through the septic tank. It is much less—of that there can be no doubt—than the quantity passing through any tank much nearer to the end of the main sewer, such as tanks Nos. 3 and 4. Hence no attempt has been made to arrive at a definite conclusion as to the possible quantity of sludge consumed in the tank, though various estimations of the quantity of suspended matter in the septic tank effluent have been made.

The system has now (the end of April, 1904) been working for nearly a year, and during the last two or three months—fairly dry weather—good results have been obtained from one filling per day. I have every reason to believe that the beds could take two fillings per day.

Owing to the great quantity of suspended matter coming over from the septic tank during wet weather, it is likely that there is a great accumulation of sludge in the tank. On one occasion the effluent contained 36 grains of suspended matter per gallon, of which 26 were mineral. During recent dry weather (April, 1904) the suspended matter averages about 11 grains per gallon.

The numbers below are the averages of analyses carried out during the last ten weeks :—

Oxygen absorption from K Mn O_4 — 4 hours.

		2nd Contact Beds.	
Septic Tank.	1st Contact Beds L M	D (1-hour contact,	E (continuous flow,
3·753	1·015	0·845	0·778

Thus the percentage purification from septic tank effluent to the first contact bed is about 72½, which is much higher than that obtained from a filter of the same age working with ordinary tank effluent ; from first contact to filter D (second contact) about 17 ; from first contact to E (continuous flow) about 23.

At the same time, all the samples from the 1st contact beds have remained non-putrescent in the incubator, except one, which is classified as "doubtful." Needless to say under such conditions all the second contact samples remained quite "sweet."

As was noticed during the experiments of 1901, there is a pretty general uniformity in the daily results for the 4-hours oxygen absorption from Potassium Permanganate, of the septic tank effluent. This characteristic of the septic tank has also been noticed at Manchester and other places.

The nitrification of both first and second contact beds is well developed. The nitrate is estimated as N H_3, and is in grains per gallon—

LM	D	E
·42	·59	·47

The average "free" ammonia and "albumenoid" ammonia results are given :—

	Septic tank.	L M	D	E
Free N H_3	3·35	1·84	1·30	1·40
Alb. N H_3	·503	·232	·214	·211

As regards loss in capacity of L and M, this seems to be very much the same as one would expect from a filter working with ordinary tank effluent during the same length of time.

Before leaving the consideration of the septic system, it should be stated that the "sludging" of the tank will be a pressing question of the near future. It will then be probably necessary to take off the earthen top of the tank. As there is no essential difference in results between closed and open septic tanks it would be advisable in the future to have the tank perfectly open and so constructed that the partial clearance of sludge from a tank can be put into effect without stopping the continuous flow of sewage through the tank in question.

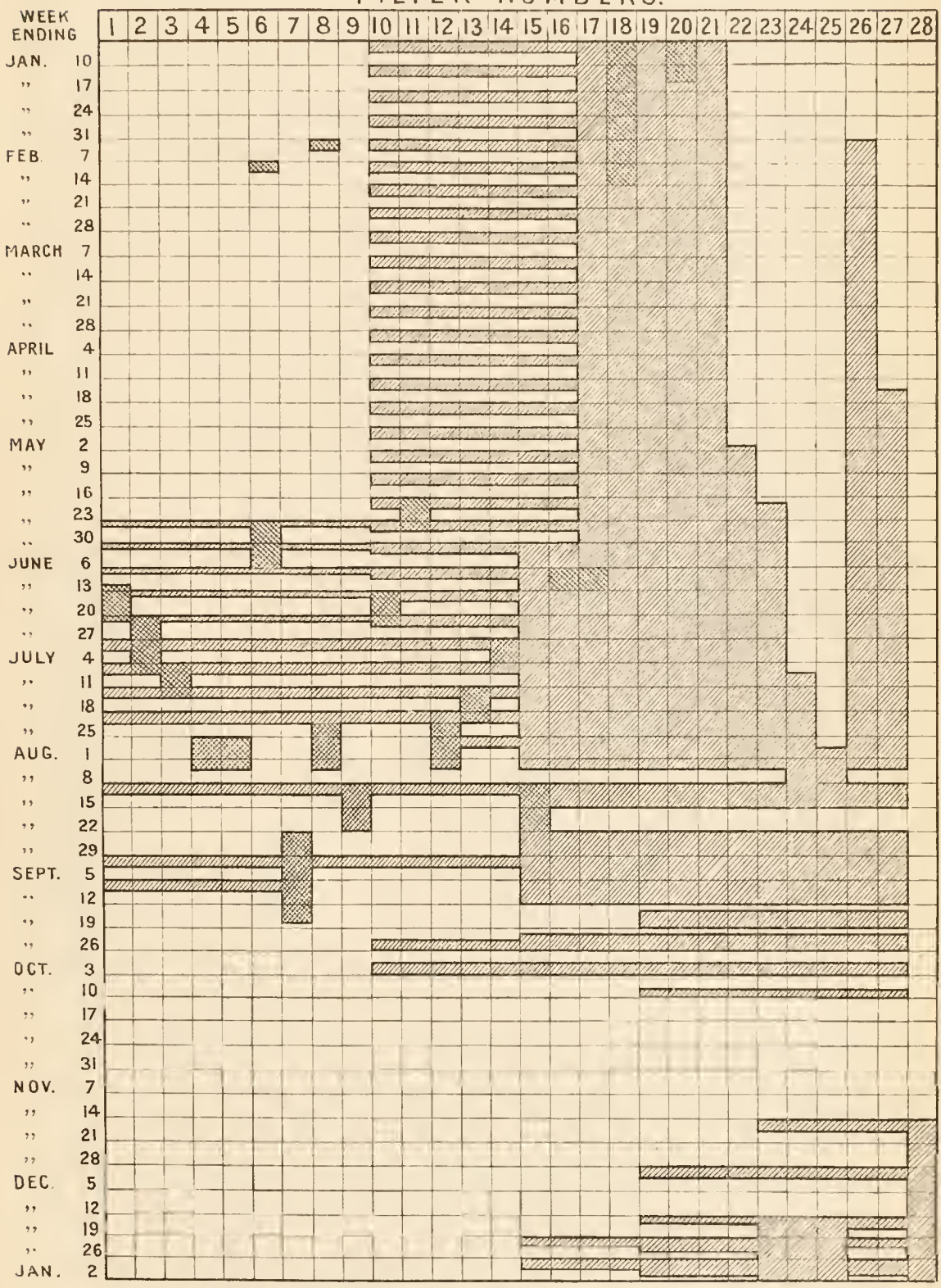
In conclusion, I believe that the septic system can be unreservedly recommended for the successful treatment of Oldham Sewage.

A. H. VALENTINE, M.Sc. (Manc.),

Chemist.

CHART

Shewing the amount of rest, and rate of working of each Filter DURING THE YEAR 1903.



A Blank space ☐ *indicates that a filter has been filled twice daily.*
A space marked ▨ *" " " " " " " once "*
A space marked ▩ *" " " " " " rested entirely*

Filter 18 was resting from Nov. 4th 1902 to Feb 14th owing to extensive surface alterations.
" 20 " " " Dec. 17th 1902 to Jan 14th " " serious leakage.

In every other case, when a bed is resting, its surface is well raked, levelled up and dirty broken down material removed.

Filter 22 began to work on May 1st
" 23 " " " " May 19th
" 24 " " " " July 8th
Filter 25 began to work on July 29th
" 26 " " " " Jan 26th
" 27 " " " " April 16th
Filter 28 began to work on Nov. 13th

No. I. GROUP.

This Group comprises Filters Nos. 1, 2, 3, 4, having an area of 5,300 square yards, a cubical capacity when completely empty of 4,515 cubic yards, representing about 758,500 gallons.

No. 1 Filter was filled for the first time in Sep., 1897. Depth of Filter, 2ft. 9in.
No. 2 ,, ,, ,, Oct., 1897. ,, 2ft. 9in.
No. 3 ,, ,, ,, Oct., 1897. ,, 2ft. 3in.
No. 4 ,, ,, ,, Oct., 1897. ,, 2ft. 6in.

Month.....	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Av'ge for Year
Sewage	3·91	3·49	3·06	3·56	4·40	4·95	4·33	3·30	2·56	2·50	2·54	4·24	3·54
Tank Effluent.	2·42	2·26	1·97	2·29	2·85	3·41	2·93	2·40	1·77	1·57	1·59	2·44	2·33
Filtrate from Group	·58	·53	·46	·62	·80	·95	·70	·58	·48	·38	·38	·66	·59
Percentage of Purification from Tank Effluent to Filtrate	75½	76½	76½	73	72⅓	72	76	75½	73	76	76	72¾	74⅔
Total Percentage of Purification from Sewage to Filtrate	85	84½	84¾	82¼	81⅓	81	83¾	82⅓	81¾	84½	85	84	83⅓

The average amount of Albuminoid Ammonia present (164 experiments) was ·160 grains per gallon.

166 determinations of the amount of Nitrate present have been made, and the average amount found was ·35 grains per gallon, estimated as NH_3.

510 samples were incubated, of which 488 remained good, 11 were doubtful, and 11 became putrid.

The amount of rest and rate of working of this Group are indicated in the Chart.

No. II. GROUP.

This Group comprises Filters Nos. 5, 6, 7, having an area of 4,726 square yards, a cubical capacity when completely empty of 3,758 cubic yards, representing a volume of 631,000 gallons.

No. 5 Filter was filled for the first time in Mar., 1898. Depth of Filter, 2ft. 3in.
No. 6 ,, ,, ,, Apr., 1898. ,, 2ft. 3in.
No. 7 ,, ,, ,, May, 1898. ,, 2ft. 3in.

Month..... ..	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Av'ge for Year
Sewage	3·91	3·49	3·06	3·56	4·40	4·95	4·33	3·30	2·56	2·50	2·54	4·24	3·54
Tank Effluent.	2·42	2·26	1·97	2·29	2·85	3·41	2·93	2·40	1·77	1·57	1·59	2·44	2·33
Filtrate from Group	·53	·45	·39	·54	·68	·83	·61	·52	·45	·35	·36	·64	·53
Percentage of Purification from Tank Effluent to Filtrate	77½	80	80	76⅓	77	75½	79⅓	77¾	74½	77½	77⅓	73⅓	77¼
Total Percentage of Purification from Sewage to Filtrate	86	87½	87	85½	85	83⅓	86	84	82¾	85½	86	84⅓	85¼

The average amount of Albuminoid Ammonia present (145 experiments) was ·150 grains per gallon.

169 determinations of the amount of Nitrate present have been made, and the average amount found was ·37 grains per gallon, estimated as NH_3.

510 samples were incubated, of which 491 remained good, 11 were doubtful, and 8 became putrid.

The amount of rest and rate of working of this Group are indicated in the Chart.

No. III. GROUP.

This Group comprises Filters Nos. 8 and 9, having an area of 2,951 square yards, a cubical capacity when completely empty of 1,785 cubic yards, representing a volume of 299,000 gallons.

No. 8 Filter was filled for the first time in June, 1898. Depth of Filter, 2ft. 6in.

No. 9 ,, ,, ,, Aug., 1898. ,, 1ft. 9in.

Month.....	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Av'ge for Year
Sewage	3·91	3·49	3·06	3·56	4·40	4·95	4·33	3·30	2·56	2·50	2·54	4·24	3·54
Tank Effluent.	2·42	2·26	1·97	2·29	2·85	3·41	2·93	2·40	1·77	1·57	1·59	2·44	2·33
Filtrate from Group	·54	·48	·44	·56	·67	·89	·60	·54	·46	·35	·35	·63	·54
Percentage of Purification from Tank Effluent to Filtrate	77½	78½	77¾	75½	77	73¾	79⅓	77⅓	74	77½	77⅔	74	76⅔
Total Percentage of Purification from Sewage to Filtrate	86	86	85¾	84	84⅔	82	86	83½	82¼	85½	86½	85	84¾

The average amount of Albuminoid Ammonia present (159 experiments) was ·155 grains per gallon.

169 determinations of the amount of Nitrate present have been made, and the average amount found was ·35 grains per gallon, estimated as NH_3.

510 samples were incubated, of which 480 remained good, 16 were doubtful, and 14 became putrid.

The amount of rest and rate of working of this Group are indicated in the Chart.

No. IV. GROUP.

This Group comprises Filters Nos. 10 and 11, having an area of 2,420 square yards, a cubical capacity when completely empty of 1,714 cubic yards, representing a volume of 288,000 gallons.

No. 10 Filter was filled for the first time in Sep., 1898. Depth of Filter, 2ft. 3in.

No. 11 ,, ,, ,, Nov., 1898. ,, 2ft. 0in.

Month.....	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Av'ge for Year
Sewage	3·91	3·49	3·06	3·56	4·40	4·95	4·33	3·30	2·56	2·50	2·54	4·24	3·54
Tank Effluent.	2·42	2·26	1·97	2·29	2·85	3·41	2·93	2·40	1·77	1·57	1·59	2·44	2·33
Filtrate from Group	·49	·45	·42	·52	·70	·95	·63	·54	·47	·35	·36	·63	·54
Percentage of Purification from Tank Effluent to Filtrate	80	80	78½	77½	76	72¼	78⅔	77⅓	73¾	77½	77	74¼	77
Total Percentage of Purification from Sewage to Filtrate	87½	87½	86¼	85⅓	84⅓	80¾	85½	83½	82¼	85½	85½	85	85

The average amount of Albuminoid Ammonia present (139 experiments) was ·151 grains per gallon.

152 determinations of the amount of Nitrate present have been made, and the average amount found was ·39 grains per gallon, estimated as NH_3.

456 samples were incubated, of which 424 remained good, 18 were doubtful, and 14 became putrid.

The amount of rest and rate of working of this Group are indicated in the Chart.

No. V. GROUP.

This Group comprises Filters Nos. 12, 13, 14, having an area of 4,259 square yards, a cubical capacity when completely empty of 4,259 cubic yards, representing a volume of 713,850 gallons.

No. 12 Filter was filled for the first time in July, 1901. Depth of Filter, 3ft.0in.
No. 13 ,, ,, ,, Aug., 1900. ,, 3ft.0in.
No. 14 ,, ,, ,, Oct., 1900. ,, 3ft.0in.

Month.....	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Av'ge for Year
Sewage	3·91	3·49	3·06	3·56	4·40	4·95	4·33	3·30	2·56	2·50	2 54	4·24	3·54
Tank Effluent.	2 42	2·26	1·97	2·29	2·85	3·41	2·93	2·40	1·77	1·57	1·59	2·44	2·33
Filtrate from Group	·48	·46	·41	·56	·74	1·03	·69	·59	·51	·35	·36	·70	·57
Percentage of Purification from Tank Effluent to Filtrate	80	79½	79¼	75½	74½	70	76½	75	72	78	77	71	75⅔
Total Percentage of Purification from Sewage to Filtrate	88	87	86½	84⅓	83⅓	79⅓	84	82	81	86	86	83¼	84¼

The average amount of Albuminoid Ammonia present (148 experiments) was ·156 grains per gallon.

164 determinations of the amount of Nitrate present have been made, and the average amount found was ·32 grains per gallon, estimated as NH_3.

453 samples were incubated, of which 434 remained good, 12 were doubtful, and seven became putrid.

The amount of rest and rate of working are indicated in the Chart.

No. VI. GROUP.

This Group comprises Filters Nos. 15 and 16, having an area of 2,859 square yards, a cubical capacity when completely empty of 2,859 cubic yards, representing a volume of 480,300 gallons.

No. 15 Filter was filled for the first time in Feb., 1901. Depth of Filter, 3ft.0in.

No. 16 ,, ,, ,, May, 1902. ,, 3ft.0in.

Month.....	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Av'ge for Year
Sewage	3·91	3·49	3·06	3·56	4·40	4·95	4·33	3·30	2·56	2·50	2·54	4·24	3·54
Tank Effluent.	2·42	2·26	1·97	2·29	2·85	3·41	2·93	2·40	1·77	1·57	1·59	2·44	2·33
Filtrate from Group.....	·62	·51	·46	·65	·82	·94	·62	·54	·48	·36	·39	·64	·58
Percentage of Purification from Tank Effluent to Filtrate	73½	77	76¾	71¾	71⅔	72½	79	77	73⅓	77½	75⅓	74	75
Total Percentage of Purification from Sewage to Filtrate	84	85½	85	81½	81⅓	81⅓	85¾	83½	82⅓	85½	84⅔	85	83¾

The average amount of Albuminoid Ammonia present (138 experiments) was ·169 grains per gallon.

129 determinations of the amount of Nitrate present have been made, and the average amount found was ·29 grains per gallon, estimated as NH_3.

413 samples were incubated, of which 387 remained good, 9 were doubtful, and 17 became putrid.

The amount of rest and the rate of working are indicated in the Chart.

No. VII. GROUP.

This Group comprises Filters Nos. 17 and 18, having an area of 2,524 square yards, a cubical capacity when completely empty of 2,524 cubic yards, representing a volume of 424,050 gallons.

No. 17 Filter was filled for the first time in July, 1902. Depth of Filter, 3ft.0in.

No. 18 ,, ,, ,, Sept., 1901. ,, 3ft.0in.

Month.....	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Av'ge for Year
Sewage	3·91	3·49	3·06	3·56	4·40	4·95	4·33	3·30	3·14	2·50	2·54	4·24	3·62
Tank Effluent.	2·42	2·26	1·97	2·29	2·85	3·41	2·93	2·40	2·38	1·57	1·59	2·44	2·37
Filtrate from Group	·48	·49	·41	·52	·79	1·08	·72	·62	·60	·37	·39	·64	·51
Percentage of Purification from Tank Effluent to Filtrate	80	78	79	$77\frac{1}{2}$	$73\frac{1}{3}$	$68\frac{1}{3}$	$75\frac{3}{4}$	$73\frac{1}{2}$	$74\frac{3}{4}$	$76\frac{3}{4}$	75	74	$75\frac{1}{2}$
Total Percentage of Purification from Sewage to Filtrate	$87\frac{1}{2}$	86	$86\frac{1}{2}$	$85\frac{1}{2}$	$82\frac{1}{2}$	$78\frac{1}{4}$	$83\frac{3}{4}$	81	$83\frac{1}{4}$	85	$84\frac{1}{3}$	85	84

The average amount of Albuminoid Ammonia present (87 experiments) was ·161 grains per gallon.

98 determinations of the amount of Nitrate present have been made, and the average amount found was ·30 grains per gallon, estimated as $N H_3$.

368 samples were incubated, of which 356 remained good, 4 were doubtful, and 8 became putrid.

The amount of rest and the rate of working are indicated in the Chart.

No. VIII. GROUP.

This Group comprises Filters Nos. 19, 20, 21, and 22, having an area of 6,063 square yards, a cubical capacity when completely empty of 6,063 cubic yards, representing a volume of 1,023,130 gallons.

No. 19 Filter was filled for the first time on May 28th, 1902. Depth of Filter, 3ft.0in.
No. 20 ,, ,, ,, Dec. 1st, 1902. ,, 3ft.0in.
No. 21 ,, ,, ,, Oct. 20th, 1902. ,, 3ft.0in.
No. 22 ,, ,, ,, May 1st, 1903. ,, 3ft.0in.

Month.....	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Av'ge for Year
Sewage	3·91	3·49	3·06	3·56	4·40	4·95	4·33	3·30	3·14	2·50	2·54	4·24	3·62
Tank Effluent.	2·42	2·26	1·97	2·29	2·85	3·41	2·93	2·40	2·38	1·57	1·59	2·44	2·37
Filtrate from Group	·52	·48	·43	·73	·98	1·23	·85	·68	·71	·43	·40	·64	·66
Percentage of Purification from Tank Effluent to Filtrate	78½	79	78	68½	66⅓	64	71¼	71¼	70	72¾	74⅓	74	72⅓
Total Percentage of Purification from Sewage to Filtrate	86½	86½	86	79¾	78	75⅓	80½	79½	77⅓	82	84⅓	85	81¾

The average amount of Albuminoid Ammonia present (77 experiments) was ·170 grains per gallon.

120 determinations of the amount of Nitrate present have been made, and the average amount found was ·25 grains per gallon, estimated as NH_3.

355 samples were incubated, of which 324 remained good, 22 were doubtful, and 9 became putrid.

The amount of rest, and the rate of working are indicated in the Chart.

No. IX. GROUP.

This Group comprises Filters Nos. 26 and 27, having an area of 2,503 square yards, a cubical capacity when completely empty of 2,503 cubic yards, representing a volume of 422,381 gallons.

No. 26 Filter was filled for the first time on Jan. 26th, 1903. Depth of Filter, 3ft. 0in.
No. 27 ,, ,, ,, April 16th, 1903. ,, 3ft. 0in.

Month.....	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Av'ge for Year
Sewage	...	...	3·06	3·56	4·83	5·04	4·67	3·30	3·14	2·50	2·54	4·24	3·69
Tank Effluent.	...	...	1·97	2·29	2·82	3·45	2·83	2·40	2·38	1·57	1·59	2·44	2·37
Filtrate from Group	...	...	·60	·90	1·41	1·62	1·06	·89	·95	·51	·45	·69	·91
Percentage of Purification from Tank Effluent to Filtrate	...	...	69½	60⅔	50	53	62½	62⅓	60	68	71	71¾	63
Total Percentage of Purification from Sewage to Filtrate	...	...	80⅓	74⅔	70¾	68	77¼	73	69¾	79	82⅓	83½	76

The average amount of Albuminoid Ammonia present (17 determinations) was ·189 grains per gallon.

54 determinations of the amount of Nitrate present have been made, and the average amount found was ·25 grains per gallon, estimated as NH_3.

194 samples were incubated, of which 168 remained good, 12 were doubtful, and 14 became putrid.

The amount of rest and the rate of working are indicated in the Chart.

No. X. GROUP.

This Group comprises Filters Nos. 23, 24, and 25, having an area of 2,849 square yards, a cubical capacity when completely empty of 2,849 cubic yards, representing a volume of 480,770 gallons.

No.23 Filter was filled for the first time on May 19th, 1903. Depth of Filter, 3ft.0in.

No.24 ,, ,, ,, July 8th, 1903. ,, 3ft.0in.

No.25 ,, ,, ,, July 29th, 1903. ,, 3ft.0in.

Month...	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Av'ge for Year
Sewage	...	...	...	...	...	..	...	3·30	3·14	2·50	2·54	4·24	3·14
Tank Effluent.	...	...	...	...	...		..	2·40	2·38	1·57	1·59	2·44	2·08
Filtrate from Group	...	...	...	..	.	...	...	·93	1·06	·56	·51	·94	·80
Percentage of Purification from Tank Effluent to Filtrate	..	...	...	...	...	..	...	$61\frac{1}{4}$	$55\frac{1}{2}$	$64\frac{1}{3}$	68	$61\frac{1}{2}$	62
Total Percentage of Purification from Sewage to Filtrate	...	...	...	...	..	.	...	$71\frac{3}{4}$	$66\frac{1}{4}$	$77\frac{2}{3}$	$79\frac{1}{4}$	$77\frac{3}{4}$	$74\frac{1}{2}$

The average amount of Albuminoid Ammonia present (4 experiments) was ·152 grains per gallon.

17 determinations of the amount of Nitrate present have been made, and the average amount found was ·28 grains per gallon, estimated as $N H_3$.

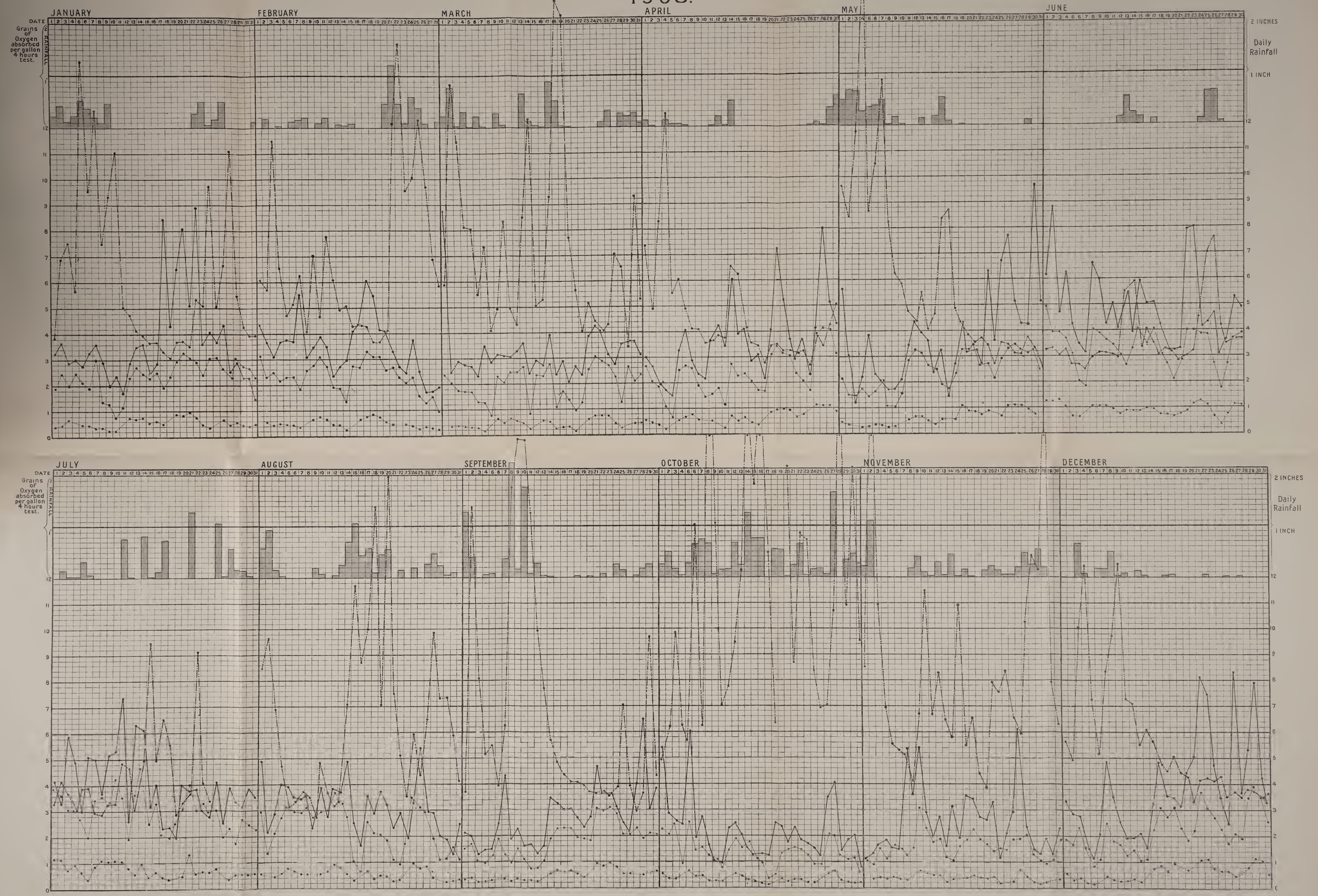
158 samples were incubated, of which 145 remained good, 4 were doubtful, and 9 became putrid.

The amount of rest and the rate of working are indicated on the Chart.

OLDHAM CORPORATION SEWAGE WORKS.

RESULTS OF DAILY ANALYSIS OF SEWAGE, TANK EFFLUENT AND FILTRATE.

1903.



The Thick Line represents the amount of Oxygen absorbed by the SEWAGE *in 4 hours Test.*
The Thin " " " " " " " " " " " " TANK EFFLUENT " " " "
The Dotted " " " " " " " " " " " " FILTRATE " " " "
The Daily Flow is represented by ——————————————

LIMIT OF IMPURITY ALLOWED BY MERSEY AND IRWELL JOINT COMMITTEE
1 GRAIN PER GALLON IN 4 HOURS TEST.